

Executive Summary

Total “TRI-reportable waste”, including on-site releases, transfers off-site, and on-site waste management, declined 3.5% compared to 2003, or 3.4 million pounds, and has declined five out of the last six years. Since 1998 the decline is 39%, or 60 million pounds. In 1998, changes in TRI reporting requirements resulted in the addition of several new facilities, significantly increasing the amounts of releases and transfers reported. Although unadjusted on-site releases reported under TRI for 2004 were higher by 8% when compared to 2003, they were lower by 13% when compared to 1998.

The primary reason for the increase in reported on-site releases in 2004 is the increase in electricity generation. The Indian River Power Plant reported a 25 percent increase in their TRI chemical releases, which was proportional to their increased production of electricity. Another reason is that some facilities changed to more accurate methods of estimating values in their reports. Some of these new methods increase the reported release amounts. These changes, combined with normal facility variations in production and reported amounts, resulted in the increase in the reported amount of on-site releases.

Introduction

What is the Toxics Release Inventory?

The Toxics Release Inventory, or TRI, is a publicly available data set containing information reported annually for toxic chemicals manufactured, processed, or otherwise used by certain facilities in Delaware and throughout the United States. Annually, these facilities report releases and waste management information for covered chemicals. The reportable list of toxic chemicals for 2004 included 582 individual chemicals and 30 chemical categories. TRI was established in 1986 under Title III, Section 313, of the Federal Superfund Amendments and Reauthorization Act (SARA 313) to provide information to the public about the presence and release of toxic chemicals in their communities. Title III is also known as the Emergency Planning and Community Right-to-Know Act (EPCRA).

Covered facilities report TRI information to the U.S. Environmental Protection Agency (EPA) and to the State in which the facility is located. In Delaware, the EPCRA Reporting Program within the Department of Natural Resources and Environmental Control (DNREC) receives and compiles TRI data from facilities located within the State. The EPCRA Reporting Program maintains a database that is updated as new reports and revisions to old reports are received. The database currently contains eighteen years of reported data. Most releases reported under TRI are also regulated through Federal and/or State permits.

This report contains detail from every 2004 TRI report and report revision from Delaware facilities filed with and received by DNREC as of November 1, 2005. Facilities must submit these reports to DNREC and EPA by July 1 of each year. Several types of analyses are presented based on this data and data from prior years.

A second, less detailed report that provides a summary of the data presented here is also available. See [Access to TRI Files](#) on page 50 for details.

Reporting Requirements

A facility is required to submit a report for a listed toxic chemical if the facility meets all of the following criteria:

1. Employs the equivalent of 10 or more full-time employees,
2. Is a covered industry, or is a federal facility (See Table 1 below for a list of covered industries), and,
3. Manufactures or processes more than 25,000 pounds, or otherwise uses more than 10,000 pounds, of the listed toxic chemical during the course of the calendar year. Limits for specific chemicals known as PBTs (Persistent Bioaccumulative Toxics) are lower (See Table 7 on page 31).

Note that from time to time, the EPA proposes changes in reporting requirements. It gives agencies, reporting facilities, and other interested parties time to comment on these changes prior to making a final decision about the proposed change. See page 8 for more details.

Facilities that meet the criteria for reporting must submit one report for each listed toxic chemical manufactured, processed, or otherwise used above threshold quantities. The reports cover activities during the previous calendar year.

It is important to note that a facility may need to report even if it has no releases of toxic chemicals, because reporting is based on the amount manufactured, processed, or otherwise used, and not the amount released.

**TABLE 1
COVERED INDUSTRIES**

SIC CODES	INDUSTRY
10XX *	Metal Mining
12XX *	Coal Mining
20-39XX	Manufacturing
4911 *	Oil and
4931 *	Coal Fired
4939 *	Electric Utilities
4953 *	Facilities Regulated Under RCRA Subtitle C
5169 *	Wholesale Chemical Distributors
5171 *	Wholesale Petroleum Stations and Terminals
7389 *	Solvent Recovery Services
XXXX **	Federal Facilities
* Added in 1998 ** Added in 2000	

Table 1 provides a list of covered industries along with corresponding 4-digit Standard Industrial Classification (SIC) codes. SIC codes are used to identify the type of activities performed at a facility. Each industry sector represented by facilities reporting in Delaware for 2004 is described in Table 5 on page 12.

The standard report (Form R) contains general facility information and data about on-site releases, off-site transfers, and on-site waste management activities. In lieu of Form R, the optional short form (Form A) may be used, provided certain criteria are met. Form A, initiated in the 1997 reporting year, is a two-page report that provides facility information (essentially the same as Form R) and identification of the chemical, but does not provide any release, transfer, or waste management data. After a facility determines that it must report on a given chemical, the facility is eligible to use Form A for that chemical if:

1. The sum of the annual releases, transfers, and wastes managed on-site (known as the "reportable amount") does not exceed 500 pounds, and,
2. The total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 pounds, and,
3. The chemical is not a persistent bioaccumulative toxic (PBT) chemical.

Limitations of TRI Data

The user of TRI data should be aware of its limitations in order to interpret its significance accurately.

- **NOT ALL FACILITIES ARE REQUIRED TO REPORT.** A relatively small number of facilities in Delaware are required to report under TRI based on the criteria listed on pages 2 - 3.
- **OTHER SOURCES NOT COVERED UNDER TRI ALSO RELEASE TOXIC CHEMICALS.** Other sources include small businesses, motor vehicles, and agricultural operations, as examples. For some chemicals, their use as consumer products is a significant source of releases.
- **FACILITIES ARE REQUIRED TO BASE TRI DATA ON MEASUREMENTS AND MONITORING DATA IF THESE ARE AVAILABLE.** If such data is not available, quantities may be estimated based on published emission factors, mass balance calculations, or good engineering judgment. Additional monitoring equipment and measurements are not required.
- **THE DATA ESTIMATION METHODS MAY CHANGE OR VARY.** The methods of estimating, analytical methodology, or basis of calculating data used by different facilities, or even the same facility over time, may vary, and may result in significant changes in reporting while the actual release may remain relatively unchanged. DNREC performs crosschecks of the data with other information sources to verify its accuracy and contacts facilities concerning apparent discrepancies.
- **REVISIONS TO FORM R MAY OCCUR AT ANY TIME.** These revisions sometimes involve significant changes for data previously reported by a facility.
- **THE DATA DOES NOT INDICATE AMOUNT OF HUMAN EXPOSURE.** An important consideration to keep in mind is that TRI does not provide an indication of potential exposure to the reported releases and cannot be used by itself to determine the impact on public health. The chemical's release rate, toxicity, and environmental fate, as well as local weather and wind direction and the proximity of nearby communities to the release must be considered when assessing exposures. Small releases of highly toxic chemicals may pose greater risks than large releases of less toxic chemicals. The potential for exposure increases the longer the chemical remains unchanged in the environment. Some chemicals may quickly break down into less toxic forms, while others may accumulate in the environment, becoming a potential source of long term exposure. The chemical exposure of a population depends on the environmental media (air, water, land) into which the chemical is released. The media also affects the type of exposure possible, such as inhalation, dermal exposure, or ingestion.

Despite these limitations, TRI serves as a valuable screening tool to identify areas of concern that may require further investigation.

Recent Developments in TRI Reporting

The TRI reporting requirements change as EPA seeks to improve the program through changes to the list of reportable chemicals and through program expansions. Because of these changes, considerable caution must be exercised when comparing TRI data from previous years. Some of the data presented later in this report will be adjusted for changes that have been made in order to present the data on a more constant reporting basis from year to year. Notations will be made to indicate which data is presented with these adjustments.

- **Form A Threshold Proposed Change**

EPA has proposed a change to the TRI Form A reporting requirements. See page 2 for a description of Form A and Form R. The proposed change would increase the Form A total waste amount reporting threshold to 5,000 pounds, up from the current 500 pounds, for non-PBT reporters. It would also begin to allow reporting PBTs except dioxins on Form A if no release or disposal activities occur for the chemical, but at the 500 pound threshold. All chemicals reported on Form A would also be required to meet the current 1,000,000 pound manufacture, process, or otherwise use threshold. Because of the loss of data associated with the conversion of current Form R reports to Form A reports (35% of 2004 Form R reports), DNREC opposes this proposal. See Appendix M for the DNREC response to this proposal.

- **Alternate Year Reporting Proposed Change**

EPA has indicated that later this year they will propose some form of alternate year reporting. We do not yet know what the proposal will contain, but if it results in a potential loss of data, DNREC will probably oppose the proposal.

- **SIC/NAICS**

In the future, the four-digit facility SIC codes will be phased out and replaced with six-digit NAICS (North American Industry Classification System) codes. Facilities will not be added or removed from the reporting requirements because of this change.

- **Industry Expansion**

Beginning with the 1998 reporting year, EPA added seven industries to the list of facilities covered under TRI. Prior to the 1998 reporting year, only manufacturers (SIC codes 20XX-39XX) and federal facilities were required to report (See Table 1 on page 2). EPA included the seven new industries because facilities within these industries manufacture and use substantial quantities of TRI chemicals and engage in activities related to those conducted by manufacturing facilities. The greatest impact to Delaware is the Electric Utilities (4931). The industry expansion significantly increased the amount of reported releases. This did not necessarily represent an increase in toxic releases in Delaware, but rather provided additional information to the public. Some of the data presented later in this report will be adjusted for these changes in order to present the data on a more consistent reporting basis from year to year.

- **Chemical List changes**

For reporting 1995 and beyond, EPA significantly expanded the list of chemicals. For reporting year 2000 and beyond, EPA established substantially lower reporting thresholds for 15 chemicals and 2 chemical categories that are highly persistent and bioaccumulative in the environment (PBTs). See page 31 for PBT data. In 2004, EPA removed methyl ethyl ketone (MEK) from the list of reportable chemicals, and naphthalene, already on the TRI list, was also added to the list of carcinogens.

2004 Data Summary

TABLE 2
2004 TRI DATA SUMMARY
(IN POUNDS)

	2004
Number of Facilities	72
Number of Form A's	52
Number of Form R's	302
Number of Chemicals	102
On-Site Releases	
Air	7,935,591
Water	1,298,993
Land	1,111,392
Total Releases	10,345,976
Off-Site Transfers	
POTW's	1,433,310
Recycle	9,841,412
Energy Recovery	2,755,903
Treatment	179,969
Disposal	3,917,032
Total Transfers	18,127,625
On-Site Waste Mgmt.	
Recycle	8,772,135
Energy Recovery	23,595,635
Treatment	31,619,848
Total On-Site Mgmt.	63,987,618
Total Reported Waste	92,461,219

Source: 2004DNREC Database, November, 2005

Statewide totals of reported 2004 TRI on-site releases, off-site transfers, and wastes managed on-site are provided in Table 2. On-site releases were higher by 7.9% compared to 2003. Increased accuracy in reporting the data (stack tests vs. estimates) accounts for some of the increases, and increases in production at many facilities that reported increases account for much of the total increase. A total of 72 facilities submitted 354 reports on 102 different chemicals. Of the 354 reports, 52 were submitted using Form A. Toluene, methanol, polycyclic aromatic compounds, benzo(g,h,i)perylene, and zinc, lead, manganese, and chromium compounds all had greater than 10 reports. As in past years, air releases, led by acid gasses, constitute the largest portion of the total on-site releases.

Types of Data

Table 2 lists all the categories of data reported to Delaware and EPA under the TRI program. Within the actual reports from facilities, the data is broken down into additional sub-categories. For ease of presentation in this report, the data has been grouped into these categories as described below.

On-Site Releases: There are four categories, but one of these, **underground injection** of TRI chemical waste to wells, is not permitted in Delaware. On-site releases in Delaware are to **air**, **water**, or **land**. The **air** release category includes stack air collected by mechanical means such as vents, ducts, or pipes, and fugitive air escaping collection and released into the general atmosphere, including equipment leaks and evaporation. **Water** releases are to water bodies, including streams, rivers, lakes, bays, or oceans. This includes releases from contained sources, such as industrial process outflow or open trenches. Water releases including TRI-reportable chemicals in runoff and storm water runoff, are also reportable. **Land** releases are to (1)RCRA landfills, in which wastes are buried, (2)surface impoundments, which are uncovered holding areas used to volatilize and/or settle waste materials, (3)other land disposal such as waste piles or releases to land such as spills or leaks, (4)land application/treatment in which waste containing a listed chemical is applied to or incorporated into soil, and (5)other non-RCRA landfill.

Off-Site Transfers: Off-site transfers include transfer of chemical waste to **POTWs** (Wastewater Treatment Plants), **recycle** operations (5 types), **energy recovery** operations (2 types), **treatment** operations (6 types), and **disposal** (12 types). The receiving facilities are separate from the facility generating the waste. This total of 23 sub-categories is provided for the purpose of classifying the types of final off-site waste management undertaken for each chemical.

On-site Waste Management: Waste management operations at the facility generating the waste are categorized to include **recycle**, **energy recovery**, and **treatment**.

On-Site Releases

On-site releases are emissions from a facility to the environment because of normal operations, including emissions to the air, discharges to surface water, disposal onto or into the ground, and underground injection. Although underground injection is an approved method for disposal in some states, it is not an approved method of TRI or hazardous waste disposal in Delaware, and thus has not been reported by any facility in Delaware since TRI reporting began. Total on-site releases to air, water, and land make up about 10% of all TRI-reported wastes.

**FIGURE 1
2004 REPORTED
ON SITE RELEASES**

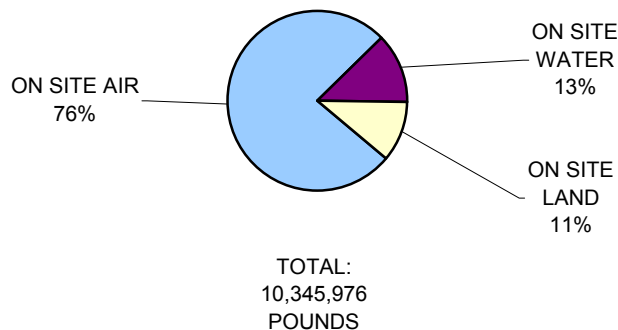


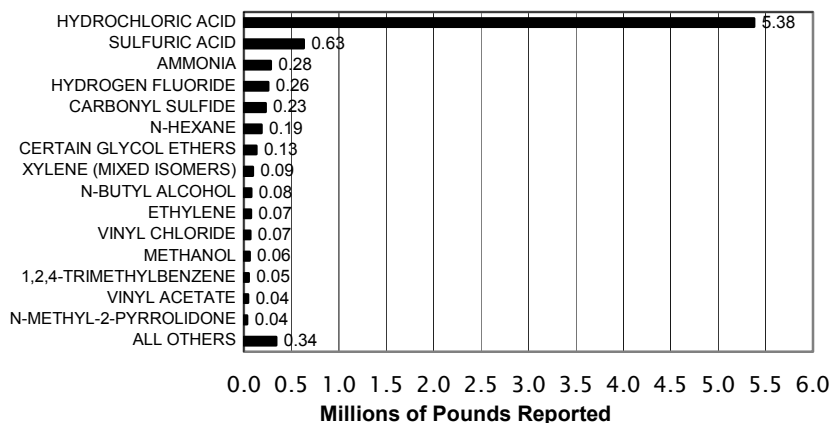
Figure 1 shows the on-site releases reported in the State. A large portion, 76% of the total on-site release, is to air. Additional analysis of on-site releases is presented in Figures 2, 3, and 4 below, showing the top 15 chemicals released to air, water, and land.

Releases to Air

Figure 2 provides an illustration of the relative release of the top 15 chemicals compared to the remaining 87 chemicals reported as released in 2004 to the air. As in all the years following the inclusion of power generating facilities, acid gasses top the list. Specifically, hydrochloric and

FIGURE 2

TOP 15 CHEMICALS RELEASED TO AIR



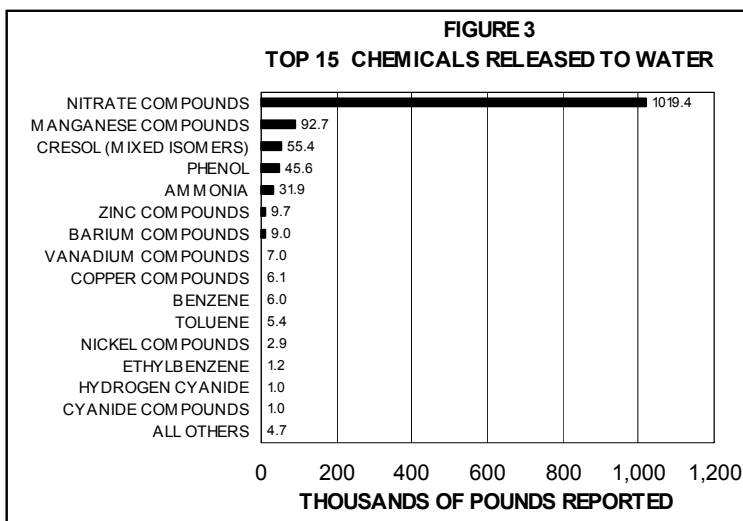
sulfuric acid aerosols (gasses) and hydrogen fluoride are released from power generating facilities located in all three counties. These three chemicals comprise 79% of all reported TRI on-site Statewide air releases. Eight facilities reported ammonia, which accounted for 4% of all on-site air releases. Premcor was the primary reporter for ammonia. Ammonia is released from food processing, petrochemical, and chemical facilities. It is used in refrigeration systems and is a by-product of air pollution control activities, primarily at electric generating facilities. Two facilities reported carbonyl sulfide, which accounted for 3% of all releases to air. DuPont Edgemoor was the primary reporter of this chemical. Two-thirds of the n-hexane release

(2.3% of total release to air) was from Honeywell in its production of caulking. Eight facilities reported on certain glycol ethers (1.6% of on-site releases to air), and nine facilities reported xylene, (1.2% of all on-site releases to air.) Certain glycol ethers and xylene are primarily used as solvents in paints for the automobile manufacturing industry. The two automobile manufacturing facilities in Delaware accounted for most of these releases.

Releases to Water

TABLE 3
TRI CHEMICALS REPORTED
RELEASED TO WATER BY WATERSHED

WATER BODY	NO. OF FACILITIES	NO. OF REPORTS	RELEASE (IN POUNDS)
CHRISTINA RIVER	1	1	725
DELAWARE RIVER	9	77	510,786
DRAWYER CREEK TRIBUTARY	1	1	5
ISLAND CREEK	1	10	7,175
MCKEE RUN	1	2	0
MUDDY RUN	1	1	0
NAAMANS CREEK	1	6	48
NANTICOKE RIVER	1	12	410,250
RED LION CREEK	1	1	4
SAVANNAH DITCH	1	1	370,000
STATE TOTAL	18	112	1,298,993



As can be seen in Figure 1 on page 6, releases to water were much lower than releases to air. On-site water releases make up 13% of the total on-site releases, compared to 76% for air. Table 3 provides the amount of TRI chemicals released to each water body that received a TRI chemical. Figure 3 shows the relative relationship of the top 15 TRI chemicals and the 23 other chemicals reported as released to water. This clearly shows the influence that nitrate compounds had on the total. Figure 3 shows that nitrate compounds was the top chemical released (97% of the total water release), followed by manganese compounds (7%) cresol (mixed isomers) (4%), phenol (3.5%), ammonia (2.5%), zinc compounds, (0.7%) and barium compounds (0.7%). The biological treatment of nitrogen-containing compounds such as animal waste and ammonia is responsible for the formation of nitrate compounds. Invista was the largest reporter of nitrate compounds at 410,000 pounds, with Perdue Georgetown reporting 370,000 pounds and Premcor reporting 239,000 pounds. Manganese compounds are

formed from ore refining and from impurities in coal used in the power generating facilities. DuPont Edgemoor reported 99% of the manganese compounds released to water. Cresol and phenol are products of petroleum refining and were released to water only by Premcor. Premcor also was the major reporter of ammonia release to water. Premcor and the Edgemoor/Hay Road and Indian River Power plants reported 97% of the zinc compound released to water, and DuPont Edgemoor reported 87% of the barium compounds released to water. These compounds are products of fuel combustion and ore refining.

Not every report in Table 3 shows a release quantity to its listed watershed. For example, of the 77 reports listing the Delaware River as their destination watershed, only 52 reports show an actual release quantity to the Delaware River. The other 25 met the TRI reporting requirements and had the potential to release to the river or may have released chemicals to other media (air or land), but did not report any amounts actually released to the river. In all, 31 reports listing a water body as a destination for a possible water release did not report any quantities actually released to that water body.

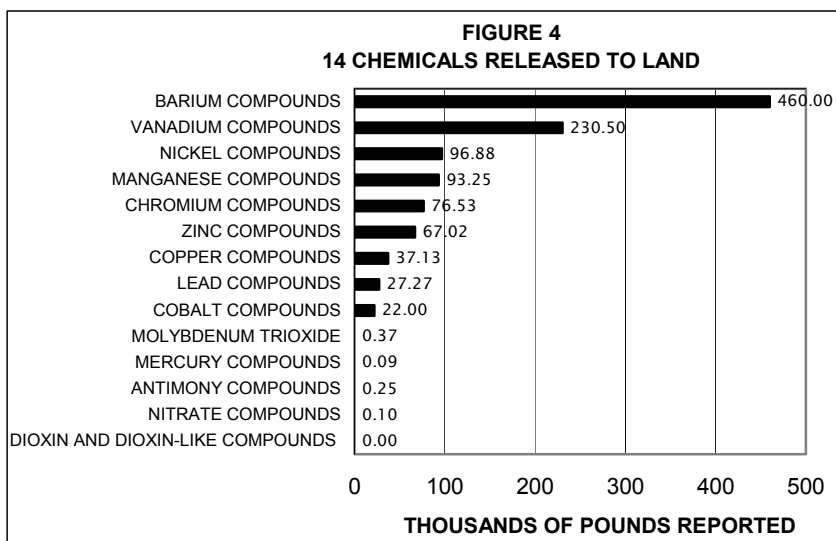
Table 4 shows the total amount of TRI chemicals released to each basin in the State of Delaware. The Piedmont Basin contains lands that drain into the portion of the Delaware River above New Castle, and the Inland bays include lands that drain into the Indian River Bay/Rehoboth Bay area. All the receiving streams except the Nanticoke River eventually feed into the Delaware Bay. The total amount released to water decreased by 383,000 pounds (42%) in 2004. Additional discussion about these releases can be found in the Trend Analysis section starting on page 37.

TABLE 4
TRI CHEMICALS
RELEASED TO WATER BY BASIN

BASIN	REPORTED RELEASE	
	(IN POUNDS)	PERCENT
CHESAPEAKE	410,250	32%
DELAWARE BAY	771,152	59%
INLAND BAYS	7,175	0.55%
PIEDMONT	110,417	9%
STATE TOTAL	1,298,993	100%

Releases to Land

Land releases, as shown in Figure 1 on page 6, are relatively small, comprising 11% of the total on-site releases. Figure 4 shows the relative contribution for all 14 chemicals reported as being released to land. Nearly all the land releases are metals and metal compounds except for the small quantities of nitrate compounds and dioxins (0.0008 pounds). Most of the metals and metal compounds being reported are formed during the combustion process from metal impurities that exist in coal or crude oil. Barium and vanadium compounds comprise 62% of the total land releases. Land releases, generally the metallic compounds shown above, by the Indian River power plant and Premcor facilities account for 99% of the total land releases. Additional discussion about these land releases and their trends can be found in the Trend Analysis Section starting on page 37.

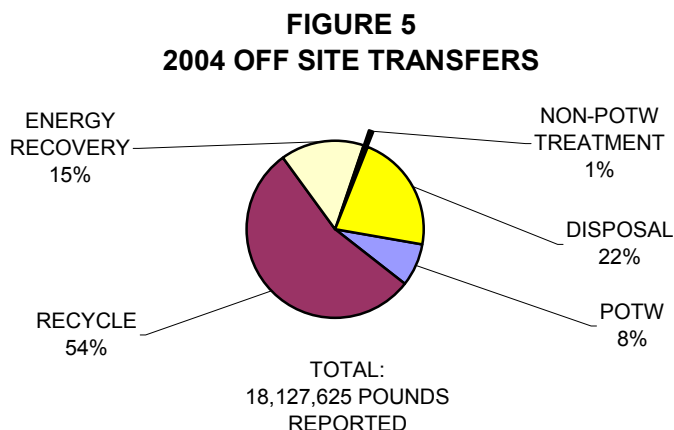


Off-Site Transfers

Off-site transfers are material transfers to off site locations for the purpose of disposal, recycling, energy recovery, or treatment. Treatment could be at a private waste treatment facility or at a publicly owned treatment works (POTWs), typically, a municipal wastewater treatment plant.

Figure 5 shows the relative portions transferred to the five off-site transfer categories. Table 2 on page 5 shows these values in tabular form, and Appendices D and G provide additional detail.

TRI Chemicals in wastes are transported by various means through Delaware to their final destinations, many of which are out-of-state. TRI chemicals were sent to 16 states, some as far away as Wisconsin and Texas. About 92% of TRI chemicals in all wastes and over 98% of non-POTW wastes that were transferred off-site were sent to out-of-state locations for further processing and/or disposal.



Reported off-site transfers account for 20 percent of the total TRI wastes. See Figure 7 on page 10 for detail. Off-site transfer to recycle operations accounted for over half of the amounts within the five categories in off-site transfers, and disposals accounted for almost another quarter of the transfers. Almost 90 percent of the transfers to POTWs were to the City of Wilmington POTW, and virtually all (99%+) transfers to POTWs were to Delaware POTW facilities. Cytex, Ciba, DaimlerChrysler, and Rohm & Haas combined for 94% of the total TRI transfers to the Wilmington POTW.

See page 47 for more information on Delaware facilities receiving TRI chemicals from other Delaware TRI facilities and from out-of-state TRI facilities.

On-Site Waste Management

On-Site Waste Management is the amount of wastes that never leave the facility site and are managed by the facility on-site. The categories of **Recycle**, **Energy Recovery**, and **Treatment** are used to define on-site management activities related to TRI chemical wastes.

Figure 6 shows the portions of these wastes processed on-site. Appendices D and G provide

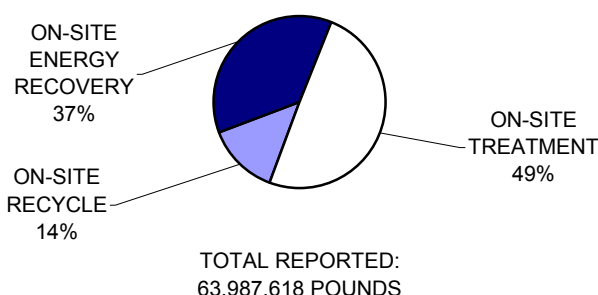
additional detail about waste management of these chemicals.

Recycled waste is the quantity of the toxic material recovered at the facility and made available for further use.

Energy Recovery includes the quantity of toxic material that had heat value and was combusted in some form of energy recovery device such as a furnace.

The **Waste Treatment** segment includes the amount of toxic material that was destroyed in on-site waste treatment operations. Ciba, Noramco, Rohm & Haas, Indian River Power Plant, Premcor, DuPont Edgemoor, and

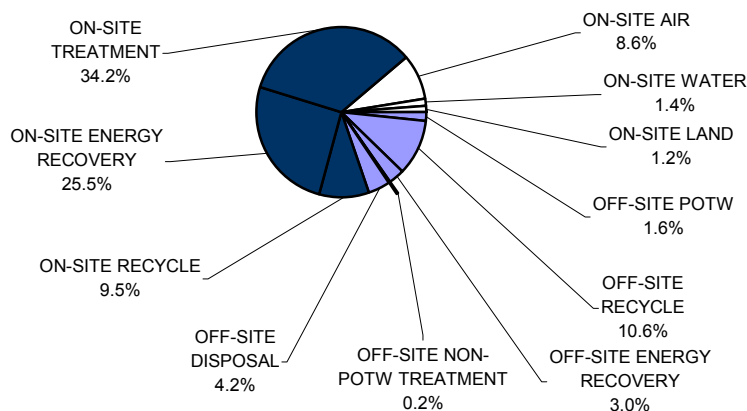
FIGURE 6
2004 ON-SITE WASTE MANAGEMENT



Occidental Chemical have some of the highest total amounts of on-site waste management. The total amount of TRI chemicals managed on-site is 69 percent of the total TRI chemical waste. See Figure 7 below for detail. This amount is over 6 times the amount of on-site releases.

Total Waste

FIGURE 7
TOTAL 2004 TRI CHEMICAL MANAGEMENT
TOTAL REPORTED: 92,461,219 POUNDS



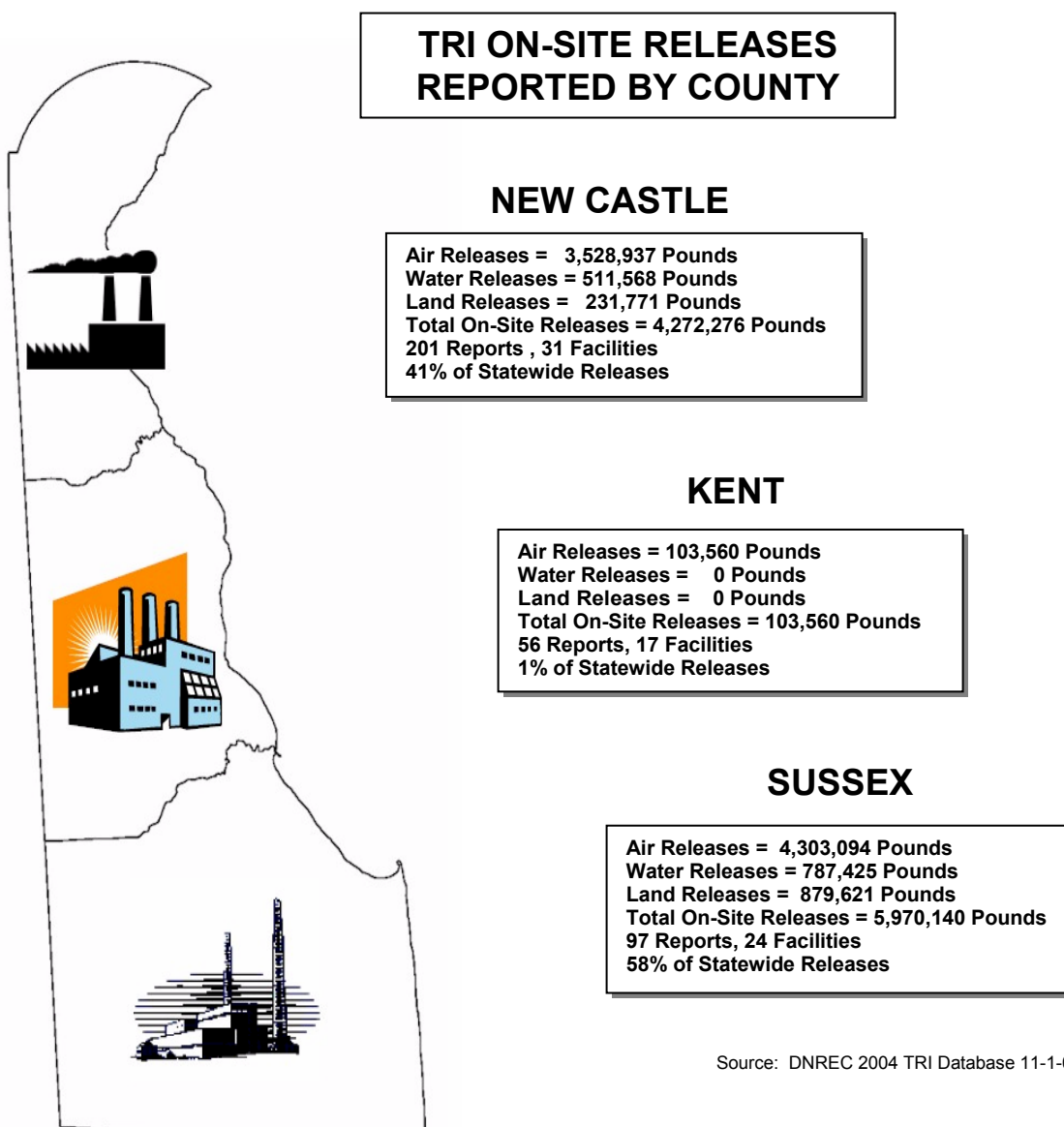
Total waste is the combined total of the on-site release, off-site transfer, and on-site waste management portions of the TRI chemical report. Figure 7 provides a perspective of the total TRI chemical waste picture in Delaware. About 11 percent of the total reported TRI waste is released on-site, 20 percent is transferred off-site, and 69 percent is managed on-site through treatment, energy recovery, and recycle operations by the facilities generating the waste. Figure 7 shows the relative portions of each segment of TRI waste management.

2004 Data Detail

On-Site Releases by County

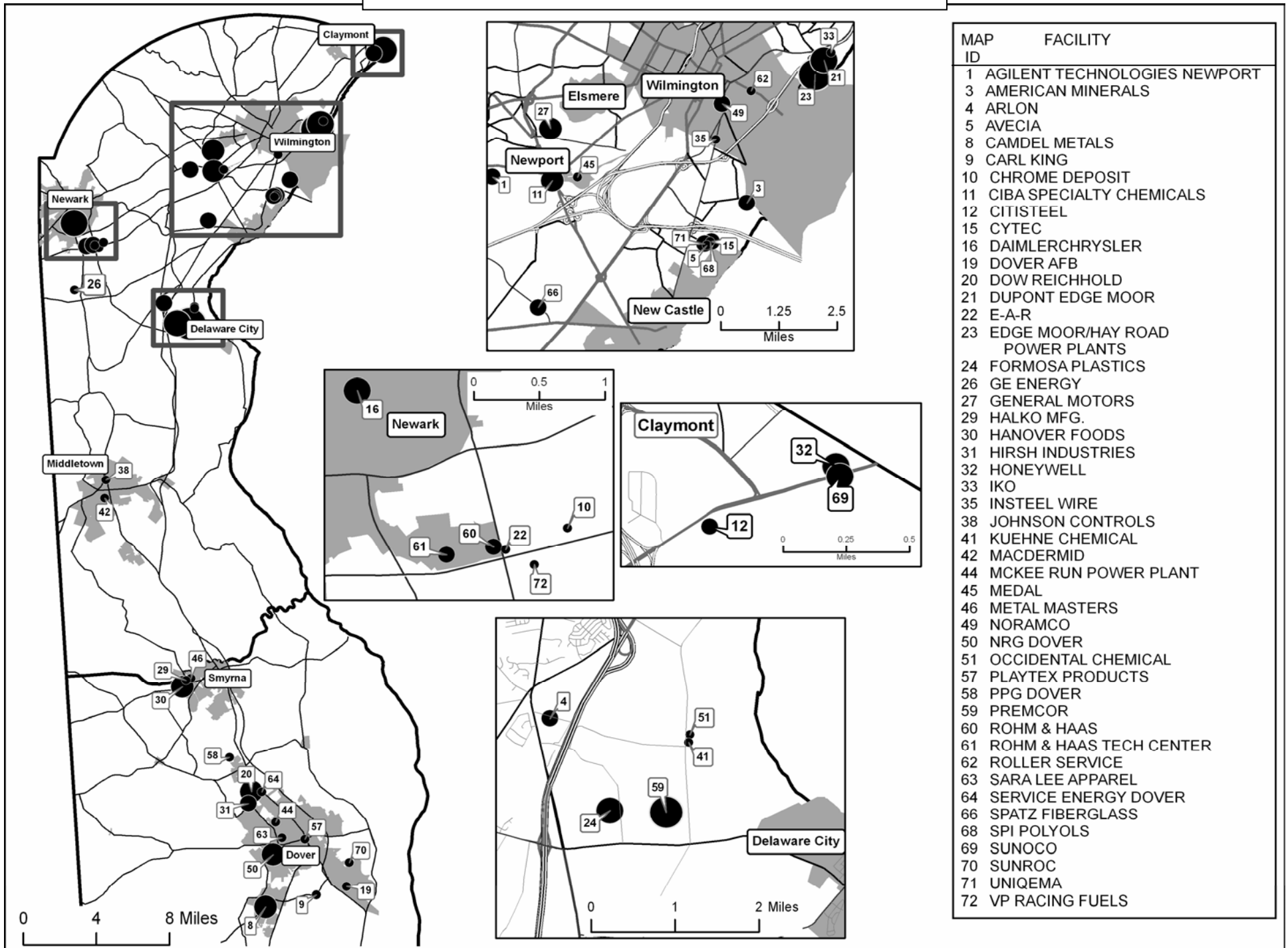
Figure 8 below provides basic on-site release information for each county in the State. Figure 9 on the following pages provides the location of each reporting facility in the State. The size of the facility location marker depicts the relative size of its on-site release relative to other facilities in the State. The facility location, telephone number, and contact person are provided in Appendix B.

FIGURE 8



Source: DNREC 2004 TRI Database 11-1-05

FIGURE 9 TRI FACILITY LOCATOR MAP



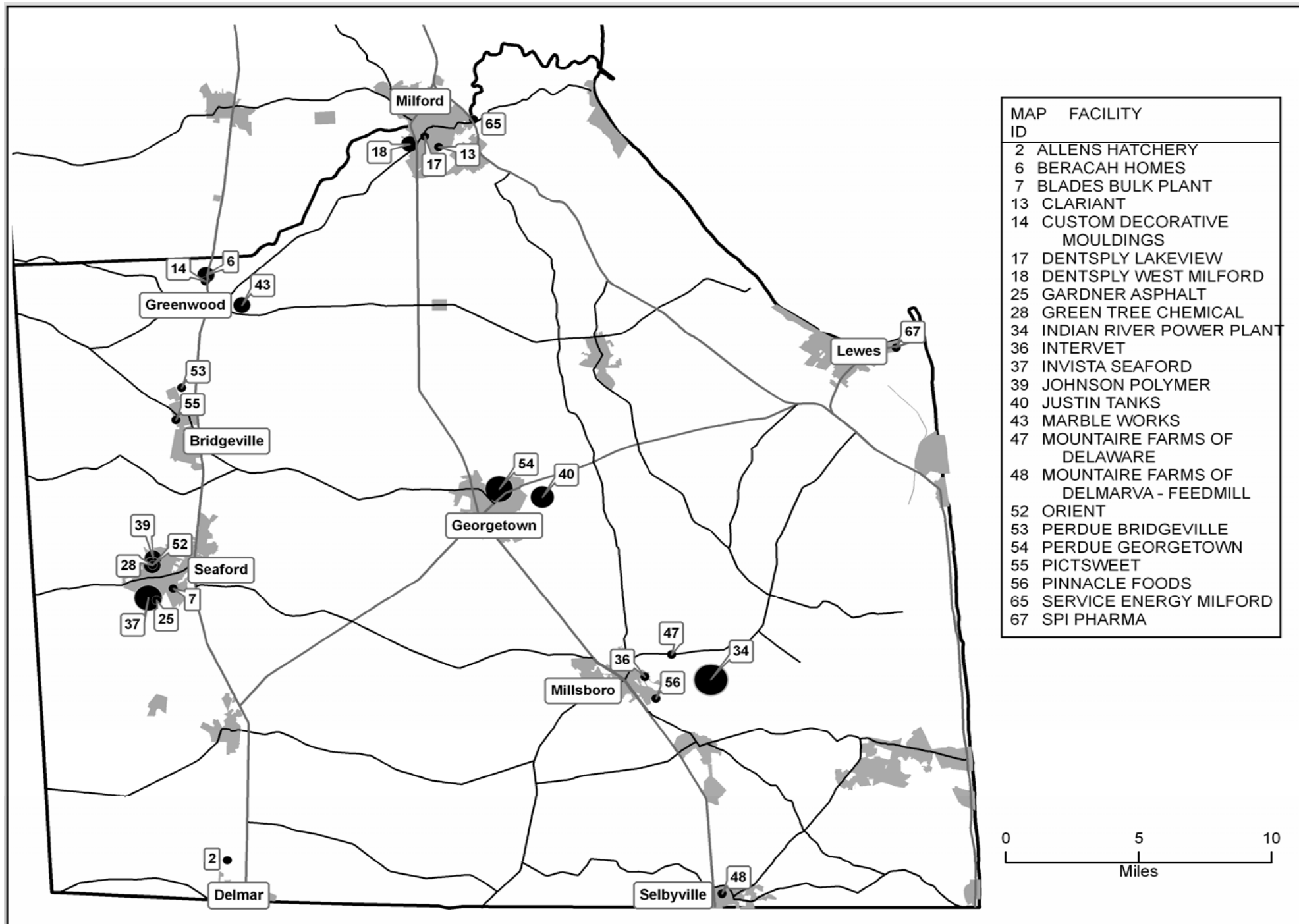


FIGURE 9 TRI FACILITY LOCATOR MAP

SIC Industry Groups

Table 5 provides a description of each Standard Industrial Classification (SIC) industry group and the number of facilities in each group that reported in Delaware, along with the reported amounts for each SIC code. This table also provides on-site releases, off-site transfers, and wastes managed on-site for each group. The one reporting facility in the metal mining group, American Minerals, processes metal ores that they receive by railcar.

TABLE 5
2004 TRI DATA BY PRIMARY SIC GROUP

(Reported amounts in pounds)

SIC CODE	INDUSTRY GROUP	NUMBER OF REPORTS	NUMBER OF FACILITIES	FORM A	FORM R	ON-SITE RELEASE	OFF SITE TRANSFERS	ON-SITE WASTE MGMT.
10	Metal Mining	5	1	0	5	7,115	0	0
20	Food Products	21	8	12	9	381,952	0	0
22	Textiles	3	1	2	1	3,200	570,228	3,950,821
24	Lumber and Wood Products	13	1	0	13	7,093	157	0
25	Furniture and Fixtures	1	1	0	1	13,608	0	0
26	Paper Products	0	0	0	0	0	0	0
28	Chemicals	117	22	6	111	1,410,818	8,807,491	27,953,939
29	Petroleum Refining and Products	56	5	4	52	1,548,552	655,076	29,632,491
30	Rubber and Plastics	16	10	5	11	43,929	278,012	162,408
32	Stone, Clay and Glass	0	0	0	0	0	0	0
33	Primary Metal	12	3	0	12	25,750	2,787,774	0
34	Fabricated Metal Products	4	2	0	4	10	263,545	1,500
35	Industrial Machinery and Equipment	2	1	0	2	0	13,316	0
36	Electronic Equipment, Except Computers	3	2	0	3	118	3,940,542	0
37	Transportation Equipment	26	3	1	25	393,027	430,754	147,180
38	Measuring Instruments, Medical/Optical Goods	7	2	0	7	1,580	38,757	0
39	Miscellaneous Manufacturing	2	1	0	2	5,031	0	0
4911	Oil and Coal Fired Power Plants	45	4	2	43	6,504,185	341,973	2,139,279
5171	Wholesale Petroleum Terminals	20	4	20	0	0	0	0
97	National Security/Federal Facilities	1	1	0	1	8	0	0
TOTAL		354	72	52	302	10,345,976	18,127,625	63,987,618

Source: 2004 TRI Database, November, 2005

FIGURE 10
2004 REPORTED ON SITE RELEASES
PERCENT BY PRIMARY SIC GROUP

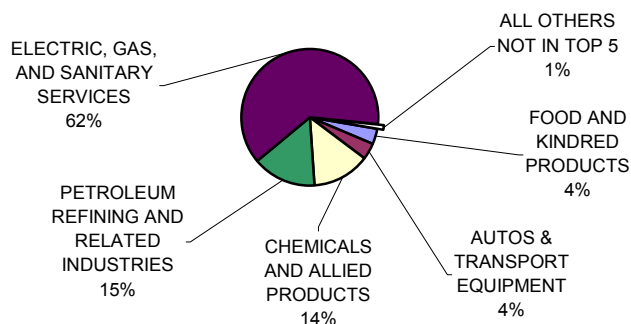


Figure 10 shows the relative contribution of each of the top 5 SIC groups and all others not in the top 5 to the reported total on-site releases. Three of these - SIC groups 4911 - (Oil and Coal Fired Power plants), 29 (Petroleum refining), and 28 (Chemicals) combined for 91% of the total on-site releases within the State. Facilities not in the top 5 industry groups reported contributions of only 107,000 pounds on-site, or 1% of the on-site release total.

RELEASES FROM THE TOP 15 FACILITIES

Figure 11 shows the relative contribution of each of the top 15 reporting facilities to on-site releases. The top four facilities are, or have as a significant portion of their facility, an energy generating operation. Of the 10,345,976 pounds that were reported released on-site by all 72 facilities Statewide, the top 15 facilities accounted for 10,225,348 pounds, or 98.8% of the total on-site releases.

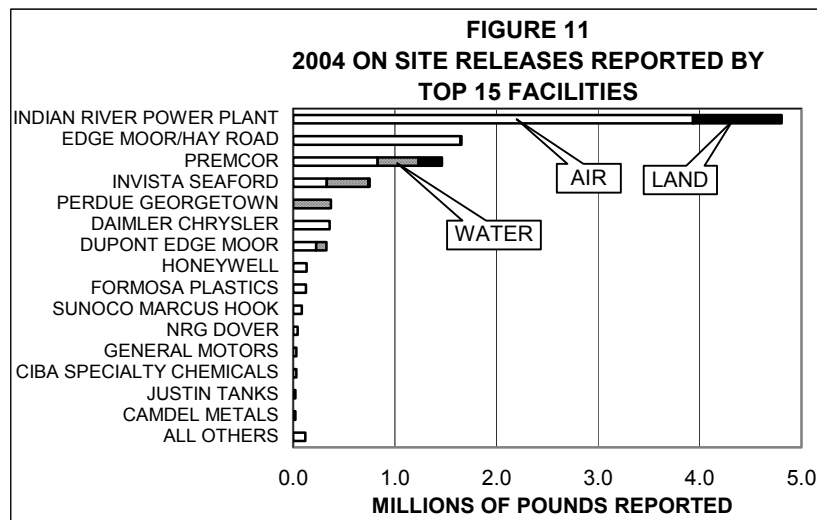


TABLE 6
TOP 15 FACILITIES 2003 AND 2004 RANKING BY ON SITE RELEASE
(in pounds)

2003 RANK	2004 RANK	FACILITY	2004			2004 TOTAL ON-SITE RELEASE	2003 TOTAL ON-SITE RELEASE	2003 TO 2004 CHANGE IN RELEASES	
			TOTAL AIR	TOTAL WATER	TOTAL LAND				
1	1	INDIAN RIVER POWER PLANT	3,932,377	7,175	866,335	4,805,887	3,893,478	912,409	23%
2	2	EDGE MOOR/HAY ROAD POWER PLANTS	1,645,412	8,875	0	1,654,288	1,796,606	(142,319)	-8%
3	3	PREMCOR	831,677	401,117	231,065	1,463,860	1,727,732	(263,873)	-15%
4	4	INVISTA SEAFORD	328,857	410,250	13,186	752,293	533,853	218,440	41%
6	5	PERDUE GEORGETOWN	0	370,000	100	370,100	320,001	50,099	16%
5	6	DAIMLER CHRYSLER	360,124	0	0	360,124	334,342	25,782	8%
7	7	DUPONT EDGE MOOR	225,437	100,277	0	325,714	280,018	45,696	16%
10	8	HONEYWELL	131,457	0	0	131,457	122,935	8,522	7%
9	9	FORMOSA PLASTICS	126,299	14	0	126,313	110,315	15,998	15%
12	10	SUNOCO MARCUS HOOK	84,181	0	0	84,181	101,951	(17,770)	-17%
11	11	NRG DOVER	44,011	0	0	44,011	46,011	(2,000)	-4%
8	12	GENERAL MOTORS	32,903	0	0	32,903	122,935	(90,032)	-73%
13	13	CIBA SPECIALTY CHEMICALS	32,361	0	0	32,361	30,371	1,990	7%
16	14	JUSTIN TANKS	21,176	0	0	21,176	20,202	974	5%
20	15	CAMDEL METALS	20,681	0	0	20,681	14,200	6,481	46%
		ALL OTHERS	118,637	1,285	706	120,628	133,942	(13,314)	-10%
TOP 15			7,816,953	1,297,709	1,110,686	10,225,348	9,454,951	770,396	8.1%
STATE TOTALS, ALL FACILITIES			7,935,591	1,298,993	1,111,392	10,345,976	9,588,893	757,083	7.9%

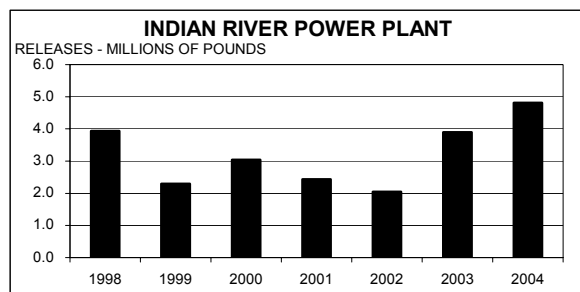
Source: 2003 and 2004 DNREC TRI Databases, November 2005

Table 6 shows the 2004 ranking of the top 15 facilities along with their 2003 ranking and the reported amounts of on-site releases for both years. The percent change in total on-site releases for each of the top 15 facilities from 2003 to 2004 is also shown. Releases to the environment because of remedial actions, accidents, or one-time catastrophic events are included in these values. Changes in production amounts may or may not affect releases from a facility. Other changes at the facility, such as changes the way releases are estimated, changes in raw materials or processing methods, or installation of new or improved production equipment possibly used to limit or eliminate releases of all or specific chemicals, may also affect reported releases. Some of these details are provided on the following pages. Interested individuals are also encouraged to contact facilities and inquire as to the reasons why changes occurred.

The next several pages present a brief description of each of the top 15 facilities to provide an understanding of the use and importance of some of the TRI chemicals and basic operations at these facilities. As in Table 6, this rank for the 2004 reporting year is based on total reported on-site releases. The facility description explains the types of products manufactured at the facility and how their TRI chemicals relate to the products and the overall plant operation. The graph included with the facility description shows the trend of the facility total on-site releases since 1998, the date of the last major TRI reporting revision. The graph for each facility includes all chemicals, including the newly reportable chemicals, which have been reported by the facility. Comparisons must be made carefully as the **scales on each of the graphs will be different**. Appendix C provides a complete list of 2004 release data grouped by facility and chemical.

Although the TRI program itself has no limits for emissions, other DNREC and Federal programs do issue permits and limit emissions from operating facilities.

Rank #1 – NRG Indian River Power Plant - Oil- and coal-fired power plants were required to report under TRI for the first time for 1998. This 784 megawatt facility, located near Millsboro, produces electricity, primarily from the combustion of coal.



The Indian River Plant reported on eighteen TRI chemicals for 2004. Ten of these were metal compounds, three were non-metallic PBTs, three were acid gases and the remaining two were ammonia and naphthalene. All the compounds except ammonia are formed during the combustion process as a result of impurities within the coal and oil. Coal consumption increased 13% in 2003 and 25% in 2004 based on energy

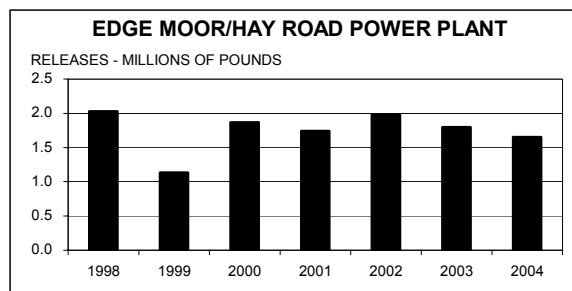
demand. TRI releases are in line with this increase. Beginning in 2003, more accurate actual stack sample data (as compared to EPA emission factor methods) were used to calculate hydrochloric acid releases, and this resulted in significantly higher release amounts for hydrochloric acid. Acid gasses, such as hydrochloric and sulfuric acid, along with hydrogen fluoride, accounted for 81% of the facility's on-site releases.

The reported amount of on-site mercury release decreased in 2004 as a result of applying current coal analysis data. Mercury total on-site releases decreased to 241 pounds, down from 395 pounds in 2003. Metal compounds, formed as a result of impurities in the coal, are largely captured (97%) in the fly ash and bottom ash and sent to an on-site landfill. The metallic compounds accounted for 19% of the facility on-site releases, and increased in 2004 because of increased fuel use and using current coal analysis data as a basis for estimates of releases. Ammonia is released in the power production process solely from the use of urea, a pollution control agent used in Selective Non-Catalytic Reduction (SNCR) technology for limiting the formation of oxides of nitrogen to the atmosphere. Ammonia on-site release doubled in 2004, the result of increased generation and associated utilization of the SNCR system. Naphthalene is in the oil consumed at the facility.

Rank #2 - Edgemoor/Hay Road Power Plants - Oil- and coal-fired power plants were required to report under TRI for the first time for 1998. These facilities are located along the Delaware River, a mile north of the Port of Wilmington, and produce electricity from the combustion of coal, oil, and natural gas.

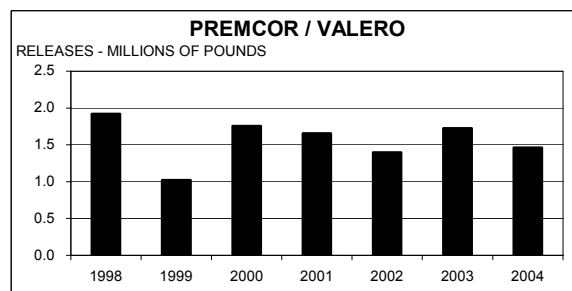
The Edgemoor/Hay Road power plants reported on nineteen TRI chemicals for 2004. These facilities reported three acid gasses, ten metal compounds, four non-metallic PBTs, nitrate compounds, and ammonia. Acid gas emissions - hydrochloric acid, hydrogen fluoride and sulfuric acid - accounted for 97% of on-site releases. Most TRI chemical releases, including the acid gasses, decreased

because of a small reduction in the amount of oil and coal used. The reported release amount of hydrochloric acid also decreased from 2003 due to use of more accurate stack test data. Overall, on-site releases decreased 8% compared to 2003 and are now 82% of the facility's 1998 level. Increases in on-site releases were reported only in lead compounds and zinc compounds. All listed compounds except ammonia are formed during the combustion process because of impurities within the fuel. Ammonia is released from the Edgemoor facility solely from the use of urea, a pollution control agent used for limiting the formation of oxides of nitrogen to the atmosphere. Ammonia is also used at the Hay Road facility for pollution control. About 92% of the metal compounds are captured in the fly ash and bottom ash. Generally, 100 percent of the captured ash is beneficially reused. It is used, for example, as an additive in concrete, as landfill stabilizer, as flowable fill in construction projects and as a base for road construction. All of the ash was reported as transferred out-of-state. The remaining 8% of metals not captured in ash was released to air and water and accounted for less than 2% of their total on-site releases.



Rank #3 – Premcor - The Premcor Refinery, located in the Delaware City industrial complex, refines crude oil into automobile gasoline, home heating oil, and a variety of other petroleum products. The facility, previously known as Motiva, changed ownership to Premcor on May 1, 2004, and again changed ownership to Valero on September 1, 2005. The 2004 data presented in this report were prepared under Premcor's ownership.

Premcor reported on 44 TRI chemicals for 2004. The reported on-site releases decreased 15% in 2004 and have decreased 24% since 1998. Sulfuric acid and hydrochloric acid gas emissions accounted for 27% of Premcor's total on-site releases and 48% of all on-site air releases. Sulfuric and hydrochloric acids are formed as acid gasses in several units at the facility, including the Fluid Coker, Fluid Cat Cracker, and the on-site power plant that combusts oil and gas. Reported sulfuric acid

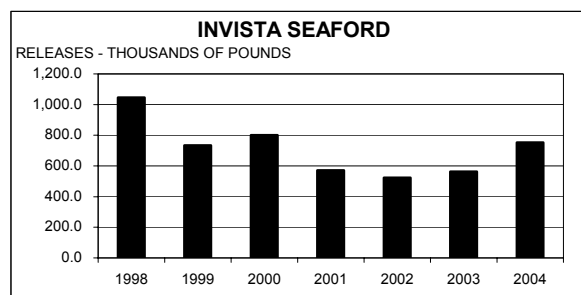


releases decreased by 90,000 pounds (26%), hydrochloric acid aerosol emissions decreased by 32,000 pounds (19%), vanadium compounds decreased by 258,000 pounds (62%), nickel compounds by 80,000 pounds (59%), and chromium compounds by 84,000 pounds (87%) in 2004. These decreases were the result of elimination of fuel oil burning and updated

emissions data and calculations. Reported ammonia releases increased by 196,000 pounds, nitrate compounds by 19,000 pounds, manganese compounds by 9,500 pounds, and hydrogen cyanide increased by 11,800 pounds. These increases were the result of an increase in production of 6%, accidental releases, and updated emissions data.

The above changes, along with other smaller increases and decreases, resulted in a net decrease of 264,000 pounds (15%) in on-site releases for the facility since 2003.

Rank #4 – Invista/DuPont Seaford - This facility was the first plant worldwide to produce spun nylon fibers, beginning operations in 1939. The spun nylon is used in the apparel industry, in carpeting, and other fabrics applications. The facility also produces nylon flake for export. The facility changed ownership from Dupont to Invista on May 1, 2004. Dupont provided reporting data for the first 4 months of 2004 and Invista provided reporting data for the remainder of 2004.

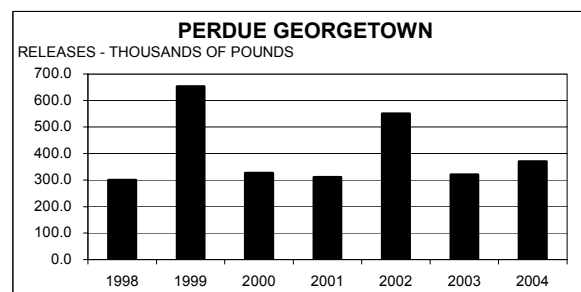


The Invista facility reported on 14 TRI chemicals for 2004. Of the 14 TRI chemicals reported, over 97% of the on-site releases were comprised of three chemicals: hydrochloric and sulfuric acid aerosols (released to air) and nitrate compounds (released to water). Combustion of coal in the Invista power plant produces hydrochloric and sulfuric acid aerosols released to air from the stacks. The

coal contains small amounts of chlorine- and sulfur-containing compounds that convert to acid gases in the combustion process. Nitrate compounds are formed as a by-product of the on-site process wastewater treatment plant, which treats wastewater coming from the nylon production process.

The Invista facility reported a 50% increase in on-site releases of nitrate compounds, hydrochloric and sulfuric acid aerosols during 2004. This was the result of a 13% increase in production, increased coal usage, and increased wastewater flow. Higher coal usage resulted in increased values for hydrochloric and sulfuric acid. Higher water usage and additional monitoring precision resulted in increased values for nitrate compounds that are produced during biological treatment of wastewater. The production increases did not result in significant changes to the other reported chemicals.

Rank #5 - Perdue Farms Georgetown - Perdue Farms is a producer of poultry products. The Georgetown facility processes chickens for sale to the retail market.

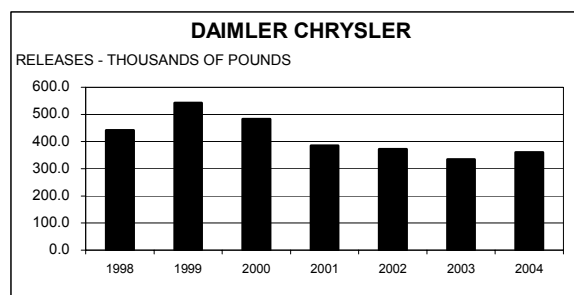


Perdue Georgetown reported on three TRI chemicals for 2004. Over 99% of the on-site releases were nitrate compounds. The Perdue wastewater treatment plant digests ammonia and production waste from the poultry processing plant's wastewater stream and converts some of these wastes to nitrate compounds.

Nitrate compound volume at Perdue's wastewater treatment plant peaked in 1999 when new government-mandated processing plant procedures dramatically increased the amount of water required to process chickens. Improvements in the wastewater treatment plant operation cut nitrate releases by more than 50 percent in 2000 and 2001, but these amounts have varied in recent years because of changes in the way the amount of nitrate compounds releases are estimated. In 2003, nitrate compound releases decreased by 42%, the result of additional water recycle projects. In 2004, a production increase accounted for the increase in nitrate compounds release.

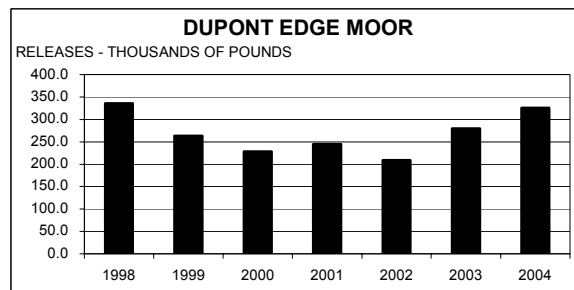
Rank #6 - Daimler Chrysler Newark Assembly Plant - Daimler Chrysler assembles the Dodge Durango SUV for distribution to dealers. Daimler Chrysler reported on 18 TRI chemicals for 2004. This facility had a production increase of 41% in 2004, but the on-site releases increased only 8% because of improvements in the painting process.

All on-site releases were to the air. Many of these are solvents used in paints or for parts cleaning, while others are materials that are incorporated into the cars themselves, such as ethylene glycol (antifreeze) and ethylbenzene (gasoline). The vehicle body coating process makes use of 1,2,4-trimethylbenzene, certain glycol ethers, methyl isobutyl ketone, n-butyl alcohol, and xylene. These chemicals are also used elsewhere in the facility. In total, the five chemicals used in the body coating process accounted for approximately 87% of the Daimler Chrysler on-site releases in 2004. Daimler Chrysler accounted for about 82% of certain glycol ethers and 49% of all xylene releases in the State in 2004.



Rank #7 - DuPont Edgemoor - The Edgemoor Plant is one of three domestic DuPont facilities that manufactures titanium dioxide, a white pigment that is used in the paint and paper industries. The facility also produces titanium chloride and ferric chloride. The plant is located along the Delaware River a few miles north of the Port of Wilmington.

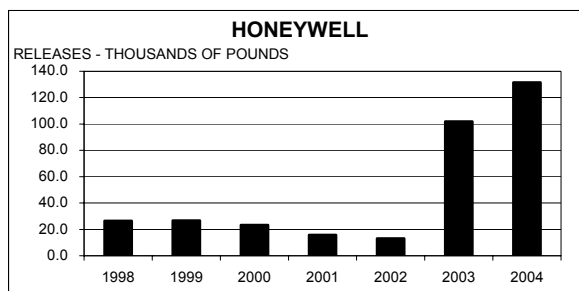
DuPont Edgemoor reported on 21 TRI chemicals for 2004. Carbonyl sulfide accounted for 66% of their total on-site release amounts and manganese compounds accounted for 28%. Carbonyl sulfide is a by-product produced from the use of sulfur-bearing coke in the process of manufacturing the titanium dioxide from titanium-rich ores. Manganese compounds are also by-products produced from the ores during the manufacturing process. Although production increased 2% in 2004, production of carbonyl sulfide decreased by 13%, but production of manganese compounds increased because of a change in ore blends and process pH adjustments, causing a net increase in on-site releases of 16%.



Also, dioxins and dioxin-like compounds are created as a result of ore processing. About 99.99% of the dioxins are contained within the solid material sent to an out-of-state landfill

facility. DuPont Edgemoor has made a public commitment to reduce dioxin and dioxin-like compounds by 90% as compared with 2001 levels. Through 2004, production of dioxin and dioxin-like compounds has been reduced by approximately 60% from 2001 levels by making process modifications.

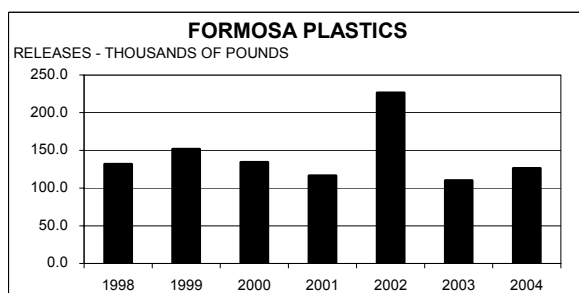
Rank #8 - Honeywell International - Honeywell, located in Claymont adjacent to General Chemical and Sunoco, manufactures specialty chemicals that are used in agricultural, pharmaceutical, and household products. This facility also produces boron trifluoride used in the production of hydrocarbon resins, lubricants, and adhesives.



The Honeywell facility reported on seven TRI chemicals in 2004. Releases of ammonia and n-hexane, used in production of caulking, accounted for about 98% of their total on-site releases. Although production increased 17% in 2003, the primary reason for the increase in the reported amount in 2003 was that Honeywell performed stack testing and is using this more accurate basis for estimating

releases. In 2004, production increased 31% and the increase in on-site releases is a direct result of the production increase. Honeywell installed additional emission reduction equipment in the later part of 2004 and changes in on-site releases as a result of this installation will be reported for 2005.

Rank #9 - Formosa Plastics - Formosa Plastics, located in the Delaware City complex, produces polyvinyl chloride (PVC) resin for bulk sale to other industries that produce PVC-based products, such as containers, flooring, carpet backing, upholstery, toys, and gloves.



Formosa reported four TRI chemicals for 2004. Vinyl chloride monomer (VCM) accounted for 54% of their on-site releases. VCM is the primary ingredient for producing PVC and is released as residual unreacted monomer during the drying process of the PVC resin. Permits regulate the concentration of the residual monomer in the PVC before drying. Vinyl acetate accounted

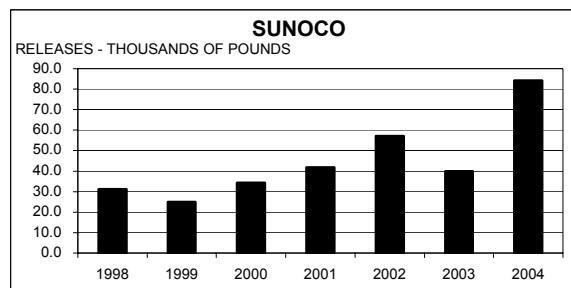
for 33% of Formosa's on-site releases. Vinyl acetate is also a raw material used in certain products and is released through the drying process. Ammonia is also used in several of Formosa's products and is released during the PVC drying process. Ammonia accounted for 13% of Formosa's on-site releases. Formosa also reported a small amount of dioxin and dioxin-like compounds in both on-site releases and off-site transfers.

Formosa Plastics initiated improved process monitoring and control in 2003 that reduced vinyl chloride emissions by 39% and vinyl acetate emissions by 67%. In 2004, on-site releases were higher by 15% compared to 2003, the direct result of a production increase.

Formosa started using a more accurate basis on which to estimate vinyl acetate releases in 2002, so direct comparison of 2002 and later years with prior years is not feasible.

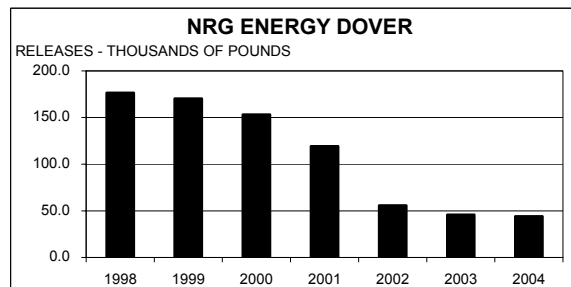
Rank #10 – Sunoco Refining and Marketing – Sunoco, located in Marcus Hook, PA extends its facility into the North Claymont area of Delaware. The Marcus Hook facility can process 175,000 barrels a day of crude oil into fuels – including gasoline, aviation fuel, kerosene, heating oil, residual fuel, propane and butane, and petrochemicals. The major petrochemicals are benzene, toluene, xylene, cyclohexane, propylene, ethylene, and ethylene oxide; these are sold to chemical companies, which use them to make a variety of other products.

The portion of the Sunoco facility in Delaware reported four TRI chemicals in 2004. Ethylene and ethylene oxide account for 97% of the total on-site Delaware releases, and small amounts of benzene and toluene were also reported as released to air from tanks in Delaware. The primary reason for the upward trend in 2004 is the large increase in the reported amount of ethylene release. This increase was the result of an improved method used to determine plant fugitives. Changes in production levels were not a factor in these changes. Ethylene oxide releases, reported for several years in Delaware, also increased, but in a smaller amount than the ethylene increase.

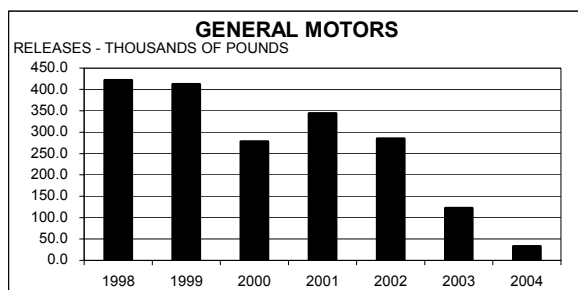


Rank #11 - NRG Dover Plant - Oil- and coal-fired power plants were required to report under TRI for the first time for 1998. This facility, located on the West side of Dover, produces electricity primarily from the combustion of coal.

The NRG Dover Plant reported on six TRI chemicals for 2004. Two of these were acid gases - hydrochloric acid and sulfuric acid - formed during the combustion process. Acid gas releases accounted for over 99% of the facility on-site releases. Small amounts of metal compounds are also formed during combustion because of metallic impurities in the coal and are largely (97%) captured in the fly ash and bottom ash and sent to an off-site landfill. The decrease in the 2002 reported releases was the result of using actual coal mine data as a basis for estimating releases of hydrochloric acid aerosols. This new basis reduced the reported release of hydrochloric acid by 65% (63,000 pounds) in 2002, and the release amount was nearly the same for 2003. The sulfuric acid release in 2003 was lower by 47%, the result of applying a coal mine coal cleaning factor which was included for the first time in the 2003 submission. The 4% reduction in 2004 was the result of reduced fuel usage. Although electricity production increased over 2003 amounts, co-generation steam production decreased.



Rank #12 – General Motors Wilmington Assembly Plant - General Motors assembles Pontiac Solstice automobiles for distribution to dealers.

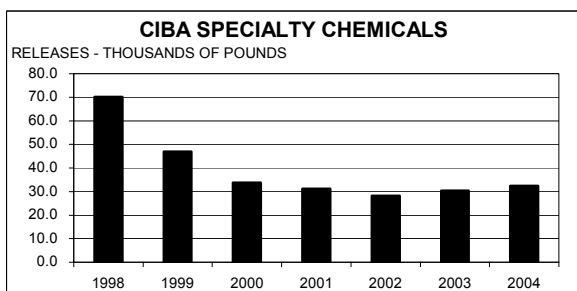


GM reported on 6 TRI chemicals for 2004. Many of these are solvents (certain glycol ethers, xylene) used in paints or for parts cleaning, while others are materials that are incorporated into the cars themselves, such as methyl tert-butyl ether (gasoline additive). All on-site releases reported by GM were to the air. Xylene, certain glycol ethers, and other paint solvents used in

both the base and top coats accounted for over 92% of their on-site releases in 2004. General Motors accounted for about 8% of certain glycol ethers and 22% of all xylene releases in the State in 2004.

Because of the down time required to change over to a new model vehicle in 2004, GM Wilmington reported a 73% decrease in on-site release of TRI chemicals following a 57% decrease due to 14 weeks of down time in 2003.

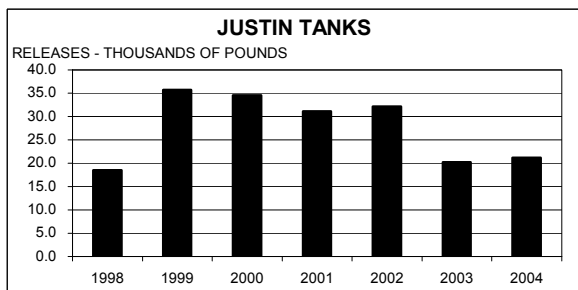
Rank #13 – Ciba Specialty Chemicals - Ciba Specialty Chemicals is located in Newport. Ciba manufactures pigments for the paints, plastic, and printing industries. They reported on six TRI chemicals for 2004. All on-site releases were to air.



Methanol was the predominant chemical released on-site (97% of total on-site releases). Methanol is used as a reactant and a solvent in the pigment manufacturing process. A significant portion of methanol used at the facility is recycled. Although production increased 17% in 2004, releases increased only 7%. Ciba has expanded and modernized their facility since 1998. Although facility capacity has more than doubled since

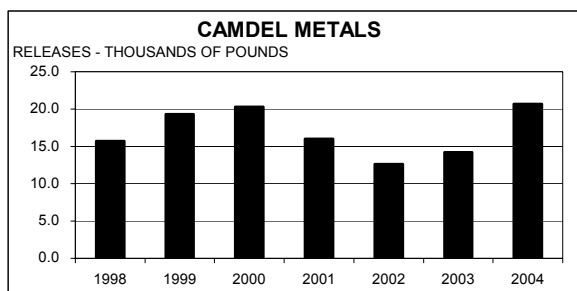
1998, they have achieved a 54% reduction in on-site releases during this time. They have also reduced transfers off-site to water treatment (POTW) by 69% since 1998.

Rank #14 – Justin Tanks – Justin Tanks is located in Georgetown and manufactures a wide variety of Fiberglass Reinforced Plastic (FRP) tanks for use in the chemical, agricultural, and food industries.



Justin Tanks reported on one TRI chemical, styrene, for 2004. Styrene is used as a monomer in the polymerization of fiberglass resin. The majority of the styrene remains in the resin during the polymerization process, but the curing process releases a small amount to the air after the tanks have been produced. On-site releases increased 5% since 2003, the result of a production increase.

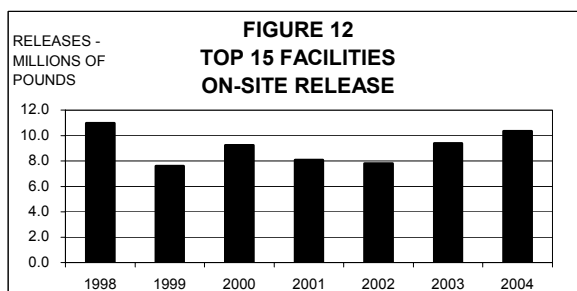
Rank #15 – Camdel Metals - Camdel Metals manufactures seamless and welded specialty stainless steel tubing. The tubing is used in medical, oil drilling, semiconductor, chemical, and instrumentation applications. The tubing ranges in size from 1/8 to 3/4 inch diameter. Some types may be supplied in coils as long as 25,000 feet.



Trichloroethylene is the primary TRI chemical reported by Camdel Metals, and makes up 100% of the on-site release amount. It is used as a solvent to clean the tubing. Camdel Metals reports on-site releases of this chemical each year. Production increases in 2003 (15%) and 2004 (27%) accounted for most of the on-site release increases over 2002. The on-site releases generally track production levels. Although the on-site

release amount of trichloroethylene increased, the amount previously reported as recycled is now more properly classified as direct reuse. The closed-system process has not changed, and the new classification is consistent with TRI guidance for closed systems.

Combined Top 15 Facilities Trend – Figure 12 shows the totals for reported on-site releases for the top 15 facilities during 1998-2004. These facilities represent over 98% of the total on-site releases in the State for 2004. Eleven facilities had increases in 2004, the most notable being the Indian River power plant. Four facilities had decreases. The total on-site release trend for this same group of facilities is down 6% since 1998. Discounting two large increases (600,000 pounds in the hydrochloric acid report from the Indian River Power Plant and

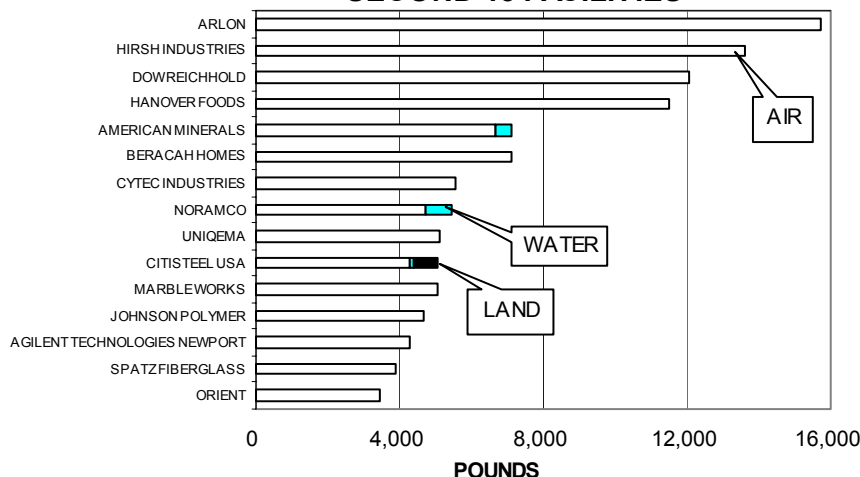


193,000 pounds in the nitrate compounds report from Invista), Statewide on-site releases for the top 15 facilities would have shown a small decrease in 2004. No adjustments were made to exclude newly reportable chemicals in the years shown on this graph. Additional trends will be presented later in this report, and some of these trends take into account the new reporting requirements.

Releases from the Second 15 Facilities

As with the first 15 facilities, a brief description of the second 15 facilities is presented on the next several pages. Although the Second 15 group of facilities released a much smaller amount of TRI chemicals on-site, their operations are an important part of the Delaware economy. Again, the ranking is based on the total facility reported on-site release. Releases to air constitute about 98% of the second 15 group total on-site release, while releases to water and land each contribute about 1%. Figure 13 shows the relative portions released to air, water, and land by each of the second 15 facilities.

FIGURE 13
2004 ON SITE RELEASES REPORTED BY
SECOND 15 FACILITIES

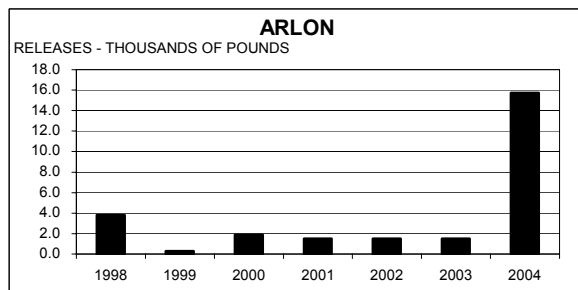


In comparing facility rankings and release amounts with prior years' data, you may note that some facilities have reduced their on-site releases and their rank did not change. This is because of the general downward trend of this group. The names of facilities in this group (and in the top 15 group) change from year to year, and in 2004 several facilities moved out of this group to a higher or lower ranking.

These facilities were replaced by other facilities, who, as a group had a lower release amount total. Individual facilities that remain in the group must keep pace with this downward trend and effect their reductions at a similar rate in order to maintain their rank. In some cases, significant reductions result in little, if any change in rank, and no change or a small reduction in release may result in an increase in rank.

Rank #16 - Arlon – Arlon specializes in ceramic-filled fluoropolymers (i.e., PTFE) and other laminates that are used in frequency-dependent circuit applications such as base stations and antennas for wireless telecommunications. Arlon also produces precision calendared silicone rubber-coated fabric sheets and specialty extruded silicone rubber tapes. Arlon reported one

TRI chemical, xylene, in 2004. Arlon uses xylene as a chemical processing aid in the coating of fiberglass with the silicone rubber dispersion. On-site release increased significantly since 2003 because of failure (repaired in September 2005) of the heat exchanger in the thermal oxidizers that destroy xylene releases from the coating process. A large portion of xylene used by Arlon is sent to the on-site thermal oxidizer system.



Rank #17 – Hirsh Industries – Hirsh Industries produces a line of consumer durables. These products include file cabinets, shelving units, and lateral filing systems. These items are used in home and office applications. Hirsh Industries is located on the north side of Dover.

Hirsh reported one TRI chemical in 2004, certain glycol ethers. It is used as a paint solvent in their process. For 2004, production activities involving certain glycol ethers increased 20%. Although on-site releases increased in 2004, total on-site release is 47% of the 1998 amount. This trend is the result of a more effective painting process, improved paint products from their vendors, and utilizing more accurate methods to estimate the amounts of releases.

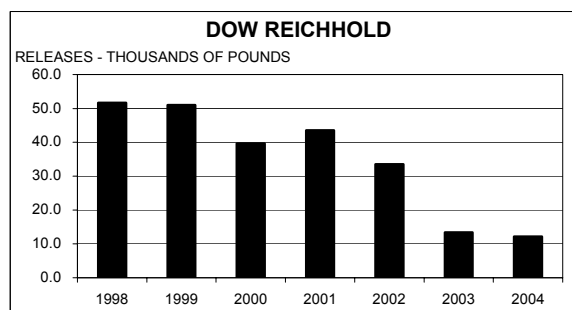
One of the chemicals previously reported no longer meets the reporting threshold. The amount also varies year-to-year because of production levels and the amount of paint used in the process.



Rank #18 – Dow Reichhold – Dow Reichhold is located two miles south of Cheswold. Dow Reichhold produces emulsion polymers, sometimes referred to as latex. These products are sold in bulk liquid form and are used in the manufacture of synthetic fuels, nitrile rubber gloves, textiles, and other specialty products.

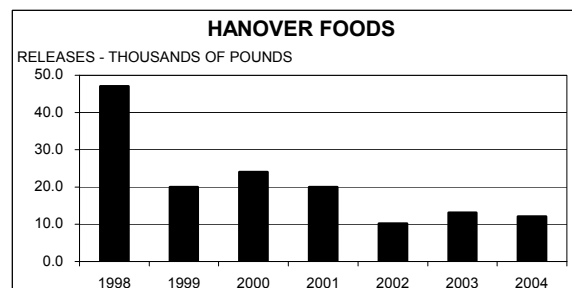
Dow Reichhold reported on 11 TRI chemicals in 2004. Most of these are raw materials used to form the emulsion polymers, and 29% of on-site releases were of 1,3-butadiene. On-site release of 1,3-butadiene in 2004 was 62% of the 2003 amount, and is now at 12% of its 1998 level. Pollution control equipment processed the residual monomers and achieved 98.0-99.9% removal efficiency before releasing its exhaust to the air. Dow Reichhold on-site releases decreased 10% in 2004, and are now at 23% of 1998 levels.

These reductions are the result of a production decrease and the implementation of a more rigorous Leak Detection and Repair (LDAR) program that exceeds current regulations. Some of the reduction is also attributable to improvements in the conversion of monomer in the production recipes.



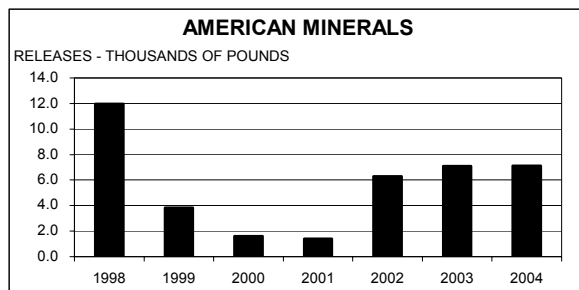
Rank #19 – Hanover Foods - Hanover Foods produces a variety of fresh, frozen, refrigerated, and canned vegetables, entrees, and snack foods. Customers for these products are the retail, foodservice, private label, military, club store, and industrial markets.

Located in Clayton, the facility freezes fresh vegetables including corn, peas, lima beans, spinach, and mushrooms, and packages frozen entrees. Hanover reported ammonia releases for the past several years. This was primarily due to leaks and other losses in their refrigeration equipment. In recent years, the increases and decreases in ammonia releases



at Hanover Foods reflect the level of production. In 1999, with the assistance of DNREC's Accidental Release Program, a program to reduce ammonia releases was begun and Hanover's on-site releases have decreased by 76% since 1998.

Rank #20 – American Minerals - American Minerals Inc. is a custom processor of naturally occurring ores and minerals. These minerals include manganese, olivine, iron chromite, and magnesite.



American Minerals is located in New Castle. This facility converts ore materials into products which are which are utilized by industry and the public on a daily basis such as bricks, steel, and fertilizer. American Minerals grinds, crushes, screens, and blends these materials into products tailored to the specific needs of their industrial, agricultural, and environmental remediation customers.

American Minerals reported on 5 TRI chemicals for 2004. These were all metals or metal compounds. Over 90% of the on-site release amount was manganese compounds released to air. Although this facility reported reductions in its on-site releases by 88% between 1998 and 2001, they did have an increase beginning in 2002 because manganese inventory was increased and a more accurate emission factor was used to estimate the manganese releases. The 13% increase in 2003 was the result of a production increase, and although another 24% production increase occurred in 2004, on-site release levels remained virtually the same.

Rank #21 - Beracah Homes –Beracah Homes is a wholesale manufacturer of off-site stick-built homes. They provide modules to the retail customer through a network of builders who finish the homes in the field. This facility is located in Greenwood. No reports were filed in 2001 and 2002 as the facility was idle and in transition from the previous owner. The current facility began operation in May 2003, and the facility filed a partial year report for that year. The 2004 year is the first full year report for this facility and a trend will be shown as additional years are reported.

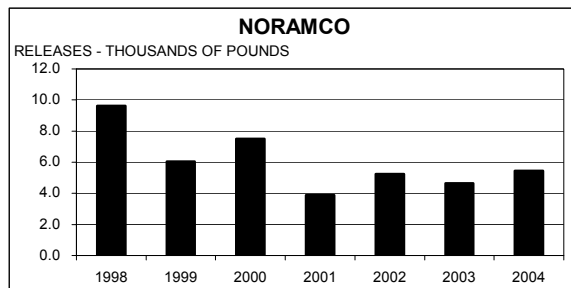
Beracah reported on 13 TRI chemicals for 2004. The largest on-site releases were from n-hexane and toluene and made up over 95 % of the total. These chemicals are used as solvents in the sub-floor, wall sheathing, and drywall adhesives of the home modules.

Rank #22 - Cytec Industries – Cytec Industries is manufacturer of polymers used in commercial and military aerospace polymer composites. This facility is located in New Castle. This facility was part of an adjacent facility, Avecia, and became a separate facility in August 2003. Cytec began reporting as a separate facility in August 2003, and the facility filed a partial year report for that year. The 2004 year is the first full year report for this facility and a trend will be shown as additional years are reported.

Cytec reported on two TRI chemicals, methanol and ethylene glycol, for 2004. The largest on-site release was from methanol and it made up over 99 % of the total on-site release. Methanol is produced on-site and used as a formulation component. Larger amounts of methanol were also sent off site for energy recovery and treatment. Cytec reported a large production increase in 2004 that was due to a production increase in the process involving methanol and having only 5 months' activity as Cytec in 2003 but a full year in 2004.

Rank # 23 - Noramco - Located in Wilmington, Noramco was formed in 1979. Noramco products include bulk active pharmaceutical ingredients and medical devices. The pharmaceutical products are primarily sold to Johnson & Johnson pharmaceutical sector finishing facilities in the United States, Argentina, Belgium, Brazil, Ireland, and Mexico. The medical devices are incorporated in medical products used by other Johnson & Johnson companies.

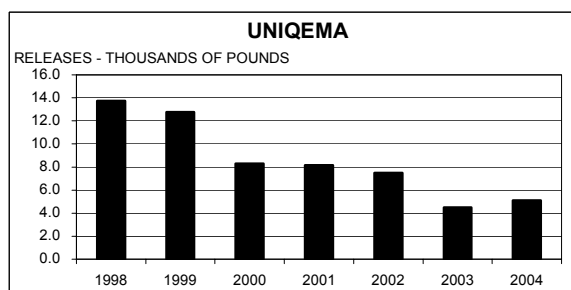
Noramco reported on-site releases of six TRI chemicals in 2004. The largest on-site chemical release was dichloromethane, followed by methanol and toluene. Most on-site releases were to air. Noramco on-site releases have decreased by 43% since 1998, with year-to-year variations reflecting both the level of production and efforts to reduce releases. For 2004, on-site releases increased by 17%, the combination of an 11% decrease in dichloromethane, a 17% decrease in methanol, and a 121% increase in toluene, the result of an accidental release. If not for an accidental release of toluene, Noramco would have reported a 12% decrease in on-site releases for 2004.



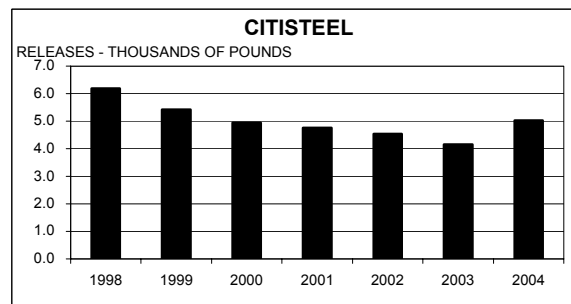
Rank #24 - UNIQEMA - Formerly ICI Atlas Point, these facilities have occupied this site located in New Castle near the Delaware Memorial Bridge since 1971.

This facility manufactures products that promote the mixing of oil and water-based ingredients in many consumer products, such as baby shampoo, shaving cream, mouthwash, pharmaceuticals, and many other personal care and industrial products.

Uniqema reported on nine chemicals for 2004. The majority of chemical release was ethylene oxide and propylene oxide. All on-site releases were to air. Uniqema TRI releases increased 14% in 2004 following a 40% decrease in 2003, but have decreased 63% since 1998. The increase in 2004 was the result of a production increase and a modification to the product portfolio in response to market conditions.

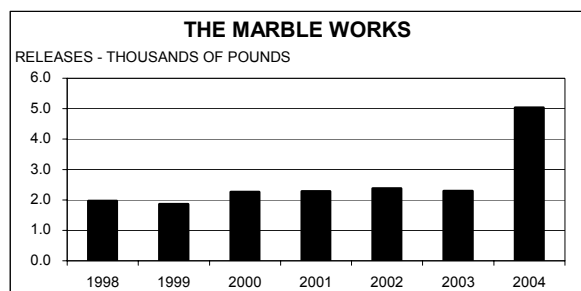


Rank #25 - CitiSteel - Located on a 425 acre site in Claymont, CitiSteel manufactures carbon steel plate for heavy industrial applications. The facility purchases and recycles over 300,000 tons of scrap steel annually and melts it in an electric arc furnace. The melted steel is cast into large slabs which are rolled into plates of thicknesses from 3/8" to 4" or more. The plates are sold throughout the entire United States.



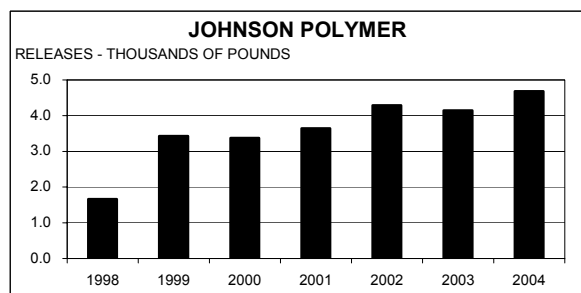
CitiSteel reported on-site releases of 7 TRI chemicals, all metallic compounds, in 2004. Most of the releases, 85%, were to air. Zinc compounds were the largest release, at 59% of the total. The increase in the 2004 on-site amount total was due to a 22 percent increase in production over 2003.

Rank #26 – The Marble Works – Established in 1983 near Greenwood, The Marble Works manufactures cultured marble products for home and commercial bath and kitchen applications. Typical customers include builders who incorporate these products into their finished buildings.



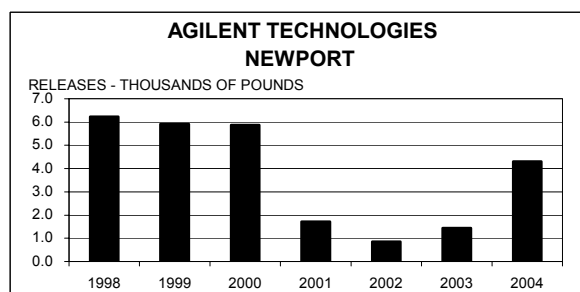
chemicals at The Marble Works have increased since 1998 through production increases and the inclusion of methyl methacrylate in their 2004 reporting as it exceeded the TRI reporting threshold for the first time.

Rank #27 – Johnson Polymer – Johnson Polymer manufactures emulsion polymers, sometimes referred to as latex, primarily for the printing and packaging industries but also used as additives for paints and coatings. Typical customers include ink and coating manufacturers.



1998 primarily due to changes in methods used to more accurately estimate release amounts. The amount increased in 2004 because of planned maintenance activities.

Rank #28 – Agilent Technologies Newport – Agilent is a global company which manufactures test and measurement equipment, life science and chemical analysis solutions, and automated test equipment. The Agilent Technologies facility located in Newport manufactures columns for use with liquid gas chromatographs, and cleans and coats glass for use in making instruments at other Agilent facilities.



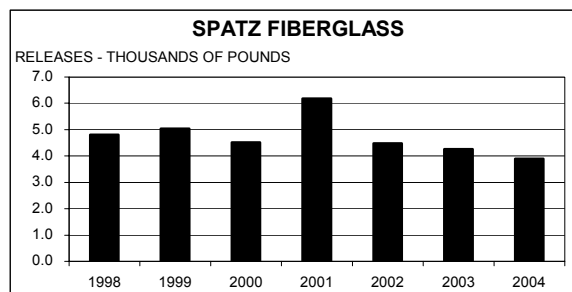
Agilent Technologies reported on-site releases of four TRI chemicals in 2004. All

of the releases were to air. The largest reported release was for toluene. Larger amounts of the chemicals are also sent off site for treatment or burned in an energy recovery unit, and nitric acid is treated and neutralized on site.

The increase in the 2004 on-site release amount was due to consolidation of some manufacturing operations from another Agilent facility to the Newport facility, initiating the reporting of acetonitrile and nitric acid in 2004 as these chemicals exceeded the TRI reporting thresholds for the first time at this facility.

Rank #29 – Spatz Fiberglass – Spatz Fiberglass Products Inc., founded in 1968 in Newark, is a custom manufacturer of fiberglass for the corrosion resistant and molded products industries.

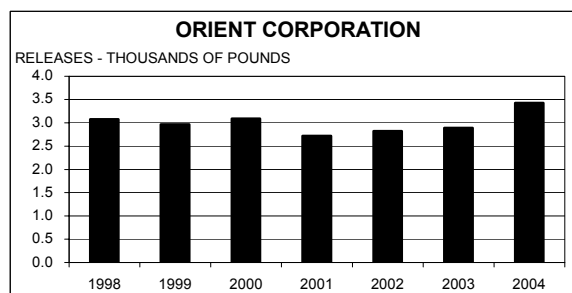
Spatz manufactures three types of products: Industrial fiberglass components, commercial gel-coated products, and architectural products. Industrial components include duct systems, pressure pipe, stacks, scrubbers, tanks, and fume hoods. Commercial products include seats and tables for fast food restaurants and helicopter prototype parts. Architectural products consist primarily of cornices, columns, and landscaping products.



Spatz reports on one TRI chemical, styrene. It is used as a solvent in their adhesives used to manufacture the fiberglass components. The trend of on-site release in recent years has been slightly down, primarily the result of lower production volumes.

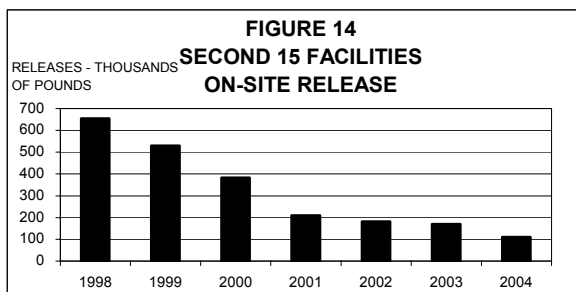
Rank # 30 – Orient Corporation of America was established in Port Newark, NJ in 1979. Its parent company, Orient Chemical Industries, Ltd., is located in Osaka, Japan and was established in 1917. Orient produces various colorants for inkjet printers.

In order to meet the increasing demand for its products, Orient Corporation of America moved its manufacturing operations to Seaford, Delaware in 1991 where it constructed a new manufacturing facility for the production of Nigrosine Dye, a product used in phenolic and polyamide resins and special paints. Orient supplies a large share of domestic demand for this type of dye.



Orient reported on three TRI chemicals in 2004. All on-site releases were to air. Aniline was the predominant on-site release, and accounted for 93% of the total. Chromium compounds and nitrobenzene were the other reported TRI chemicals, with nitrobenzene showing a small release to air. All these chemicals are used in the production of dyes. Additional amounts of aniline were sent off-site for treatment, and some aniline waste was also treated on-site. On-site releases have increased by 11% since 1998, while production levels increased 28%.

Combined Second 15 Facilities Trend - Figure 14 shows the totals for the facilities ranked #16-30 for reported on-site releases. The trend is down by 83% since 1998. This trend shows a greater percent decrease than the top 15 group, which had a 7% decrease since 1998. Because of the greater decrease in amounts of the Second 15



group, its contribution to the State total decreased from 3% in 1998 to 1% in 2004. Facilities in the Second 15 group tend to be more closely spaced in their rankings with regard to pounds released on-site. This adds to the variability in rankings from year-to-year as individual facility releases vary in their normal course of operations.

Persistent Bioaccumulative Toxic (PBT) Chemicals

For reporting year 2000 and beyond, EPA established substantially lower reporting thresholds for 15 chemicals and 2 chemical categories that are highly persistent and bioaccumulative in the environment (PBTs). Six chemicals and one new category were also added to the PBT list in 2000. The new thresholds apply regardless of whether the PBT chemical is manufactured, processed, or otherwise used. Table 7 provides a list of these PBT chemicals and their thresholds.

Persistent Bioaccumulative Toxics (PBTs) are receiving increased scrutiny as we learn more about them, and reporting PBTs is also being emphasized to an increasing degree. These chemicals are of particular concern because they are not only toxic, but because they remain in the environment for long periods of time, are not readily destroyed, and accumulate in body tissues. The EPA established substantially lower reporting thresholds in 2000 for 15 chemicals and three chemical categories that are highly persistent and bioaccumulative in the environment. Beginning with reporting year 2001 and beyond, lead and lead compounds also have a reduced threshold of 100 pounds, down from the previous 25,000 pounds for manufactured and processed and 10,000 pounds otherwise used thresholds, except lead contained in stainless steel, brass, or bronze alloys. Therefore, not all of the PBT chemicals released in prior years were reportable, even though it is likely they were released at or near the current reported rate. For example, 21 facilities reported lead or lead compounds in 2002 and 2001 and 19 in 2003 compared to seven in 2000. All of these facilities were in operation prior to 2001. Dover Air Force Base (DAFB) Small Arms Range was top reporter for on-site lead release in 2001 but did not report any lead release for 2002-2004. Although at least two Executive Orders, 12856 and 13148, encourage Federal facilities to set leadership examples in reporting information to the public regarding toxic and hazardous chemicals, the DAFB claims that the Small Arms Range, on the grounds of the Base, is a separate facility and is exempt since it has less than 10 full time employees. Although DAFB did report a small amount of one fuel-based chemical in 2004, it used a TRI-allowable exemption to exclude other non-PBT TRI chemicals on the Base that might otherwise be reportable.

TABLE 7
PBT CHEMICALS AND
REPORTING THRESHOLDS
(pounds/year)

Chemical or Chemical Category	Threshold (Pounds)
Aldrin	100
Benzo[g,h,i]perylene	10
Chlorodane	10
Dioxin and dioxin-like compounds category	0.1 grams
Heptachlor	10
Hexachlorobenzene	10
Isodrin	10
Lead *	100
Lead and lead compounds *	100
Mercury	10
Mercury compounds	10
Methoxychlor	100
Octachlorostyrene	10
Pendimethalin	100
Pentachlorobenzene	10
Polychlorinated biphenyls (PCB's)	10
Polycyclic aromatic compounds category	100
Tetrabromobisphenol A	100
Toxaphene	10
Trifluralin	100

* Lower Threshold For 2001 Reports

Additional release information on all PBTs reported to the Delaware TRI program can be found starting on the next page.

Table 8 shows the results of PBT reporting for 2002-2004 compared to total 2004 TRI data. PBT on-site releases for 2004 comprise about 0.3% of the total TRI on-site releases. Total

TABLE 8
2002-2004 TRI PBT DATA SUMMARY
(REPORTED AMOUNTS IN POUNDS)

	All Data 2004	PBT's only 2004	PBT's only 2003	PBT's only 2002
Number of Facilities	72	25	28	32
Number of Form A's	52	NA	NA	NA
Number of Form R's	302	59	62	66
No. of PBT Chemicals	102	11	11	11
On-site Releases				
Air	7,935,591	3,761	4,938	5,282
Water	1,298,993	1,002	311	784
Land	1,111,392	27,356	22,116	17,166
Total On-Site	10,345,976	32,118	27,365	23,232
Off-site Transfers				
POTW's	1,433,310	11	2,013	818
Recycle	9,841,412	4,293,112	4,575,042	5,053,729
Energy Recovery	2,755,903	0	0	0
Treatment	179,969	0	0	1
Disposal	3,917,032	66,150	70,592	69,178
Total Transfers	18,127,625	4,359,274	4,647,648	5,123,727
On-site Waste Mgmt.				
Recycle	8,772,135	10,603	7,185	3,960
Energy Recovery	23,595,635	0	0	0
Treatment	31,619,848	766	710	390
Total on-site Mgmt.	63,987,618	11,369	7,895	4,350
Total Reported Waste	92,461,219	4,402,761	4,682,908	5,151,309

Source: 2004 DNREC Database, November, 2005

reported PBT wastes decreased by 6% in 2004 but PBT on-site releases were higher by 17%. All reports are made on Form R, as Form A may not be used to report PBTs.

Table 9 below shows the amounts of each PBT chemical reported released by the TRI reporting facilities in 2004. Lead compounds made up 85% of the total on-site PBT releases and over 99% of the transfers off-site. Johnson Controls again reported the top amount of lead compounds transferred off-site, to recycling. Johnson Controls has been reporting on lead compounds since 1987.

TABLE 9
2004 PBT RELEASE SUMMARY
(REPORTED AMOUNTS IN POUNDS)

2004 PBT CHEMICAL	FORM R REPORTS	ON-SITE RELEASES				TRANSFERS OFF SITE	ON-SITE WASTE MGMT.
		TOTAL AIR	TOTAL WATER	TOTAL LAND	TOTAL		
BENZO(G,H,I)PERYLENE	10	1	4	0	5	0	420
DIOXIN AND DIOXIN-LIKE COMPOUNDS (1)	7	0	0	0	0	63	0
HEXACHLOROBENZENE	1	0	1	0	1	2,014	0
LEAD	3	3	1	0	4	168	9,000
LEAD COMPOUNDS	12	2,894	963	27,266	31,123	4,349,074	0
MERCURY	2	264	15	0	279	7,200	1,600
MERCURY COMPOUNDS	7	308	0	255	563	113	0
OCTACHLOROSTYRENE	1	0	0	0	0	430	0
PENTACHLOROBENZENE	2	16	13	0	29	42	0
POLYCHLORINATED BIPHENYLS (PCB)	1	0	0	0	0	52	0
POLYCYCLIC AROMATIC COMPOUNDS	13	110	4	0	114	117	349
TOTALS	59	3,596	1,002	27,521	32,118	4,359,273	11,369

Source: 2004 DNREC Database November 2005

(1) Dioxins are reportable in grams and have been converted to pounds.

Reported mercury on-site release amounts decreased 64% due to a decrease in the amount reported from Occidental Chemical, and mercury compounds decreased 23% due to a decrease in the reports from the Indian River and Edgemoor Power Plants. Occidental Chemical contributed virtually all the 279 pounds of mercury released on-site. However, the Occidental facility ceased operations involving mercury as of November 10, 2005. TRI-reported activities involving mercury at this facility will drop substantially, if not to zero, as the facility removes mercury from its site and proceeds with dismantling and cleanup of the portion of the process that contained mercury. The Indian River Power plant reported a 6,300-pound increase in the on-site release of lead compounds, primarily the result of increased electrical production. Halko again reported the top amount of on-site PBT chemical waste management with 9,000 pounds of lead being recycled on-site. Appendix I shows the PBT data detail, listing each facility reporting each PBT chemical.

Carcinogenic TRI Chemicals

Some chemicals are reportable under TRI because they are either known or suspected human carcinogens. Known human carcinogens are those that have been shown to cause cancer in humans. Suspected carcinogens are those that have been shown to cause cancer in animals. Table 10 contains those known and suspected carcinogens that were reported by Delaware facilities for 2004. Next to each chemical is its International Agency for Research on Cancer (IARC) rating as a: Known (1), Probable (2A), or Possible (2B) carcinogen. Polycyclic aromatic compounds is a class of chemicals with chemicals in both 2A and 2B IARC classifications. Of the 10.3 million pounds of TRI chemicals reported by facilities as released on-site to the environment in 2004, 4.4% (456,000 pounds) were known or suspected carcinogens. Releases on-site of all carcinogens decreased 23% (134,500 pounds) compared to 2003 data and decreased 47% (401,000 pounds) since its peak in 1998. For additional information on cancer rates and causes, please go to the Public Health cancer web site listed in the "For Further Information" section on page 50. Carcinogen trend analysis is presented on the next page.

**TABLE 10
CARCINOGENS REPORTED BY
DELAWARE FACILITIES FOR 2004**

CHEM NAME	IARC	NO. OF REPORTS
1,3-BUTADIENE	2A	2
1,3-DICHLOROPROPYLENE	2B	1
4,4'-METHYLENEBIS(2-CHLOROANILINE)	2A	1
ACRYLONITRILE	2B	1
BENZENE	1	6
CHROMIUM COMPOUNDS	1	10
COBALT COMPOUNDS	2B	3
DICHLOROMETHANE	2B	1
DIETHYL SULFATE	2A	1
ETHYL ACRYLATE	2B	2
ETHYLBENZENE	2B	5
ETHYLENE OXIDE	1	2
FORMALDEHYDE	2A	1
HEXACHLOROBENZENE	2B	1
LEAD	2B	3
LEAD COMPOUNDS	2B	12
NAPHTHALENE	2B	6
NICKEL	2B	3
NICKEL COMPOUNDS	1	7
NITROBENZENE	2B	1
P-CHLOROANILINE	2B	1
POLYCHLORINATED BIPHENYLS (PCB)	2A	1
POLYCYCLIC AROMATIC COMPOUNDS	2A,B	13
PROPYLENE OXIDE	2B	1
STYRENE	2B	6
TETRACHLOROETHYLENE	2B	1
TOLUENE DIISOCYANATE (MIXED ISOMERS)	2B	2
TRICHLOROETHYLENE	2A	2
VINYL ACETATE	2B	2
VINYL CHLORIDE	1	1
TOTAL =		99

Source: 2004 DNREC Database, November, 2005

Carcinogens Trend, 1995-2004

The number of carcinogen reports increased by two to 99 in 2004, and the total number of carcinogen chemicals increased by one to 30 following a large increase in the number of lead and lead compounds reporting facilities in 2001 (because of the reduced reporting threshold). Additional information of lead and lead compounds is on pages 31-32. Table 11 provides the individual data and overall totals for each of the IARC classes of carcinogens, and Figure 15 below shows the trend of on-site carcinogen releases in Delaware.

TABLE 11
1995-2004 CARCINOGENS
REPORTED ON-SITE RELEASES IN POUNDS, NOT ADJUSTED

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
KNOWN										
AIR	253,818	225,184	192,099	209,094	219,970	209,828	209,295	177,473	123,191	96,562
WATER	596	201	6,917	10,246	3,048	4,395	9,114	9,682	9,339	9,817
LAND	1,791	331	286,041	363,793	306,630	258,008	169,197	170,074	312,576	173,414
KNOWN TOTAL	256,205	225,716	485,057	583,133	529,648	472,231	387,606	357,229	445,106	279,793
PROBABLE										
AIR	113,482	78,491	55,274	53,558	139,293	55,418	44,326	35,581	24,216	27,417
WATER	0	0	0	0	0	0	0	0	4	4
LAND	0	0	0	0	0	0	0	0	0	0
PROBABLE TOTAL	113,482	78,491	55,274	53,558	139,293	55,418	44,326	35,581	24,220	27,421
POSSIBLE										
AIR	331,904	344,888	223,518	167,420	186,506	135,946	91,851	189,296	98,269	97,247
WATER	359	351	196	1,175	290	271	4,873	2,109	1,431	2,308
LAND	0	5	2,550	51,625	142	40	21,607	17,475	21,714	49,266
POSSIBLE TOTAL	332,263	345,244	226,264	220,220	186,938	136,257	118,331	208,880	121,414	148,821
TOTAL AIR	699,204	648,563	470,891	430,072	545,769	401,192	345,472	402,350	245,676	221,226
TOTAL WATER	955	552	7,113	11,421	3,338	4,666	13,987	11,791	10,773	12,129
TOTAL LAND	1,791	336	288,591	415,418	306,772	258,048	190,804	187,549	334,290	222,680
GRAND TOTAL	701,950	649,451	766,595	856,911	855,879	663,906	550,263	601,690	590,739	456,035

Source: DNREC TRI 2004 Database, November 2005

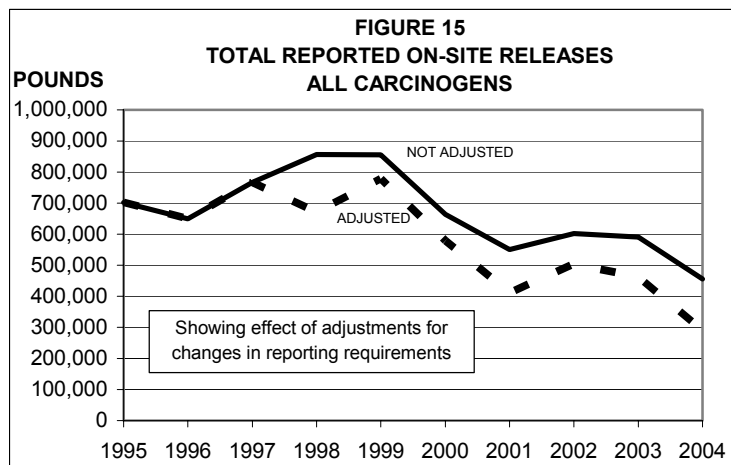
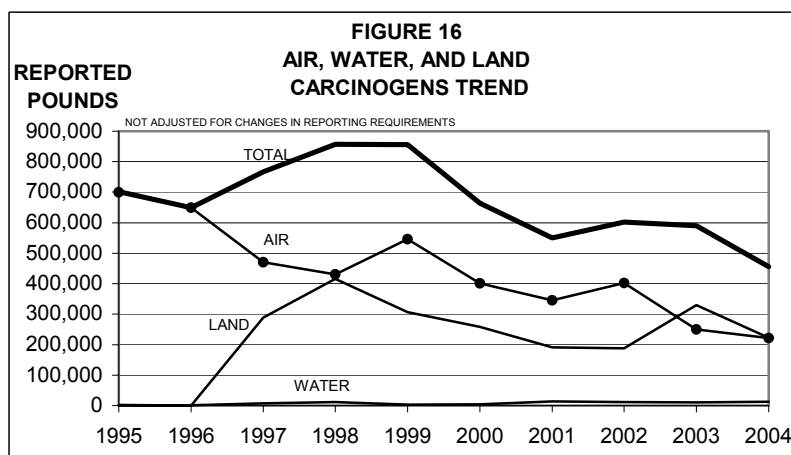


Table 11 contains amounts unadjusted for changes in reporting requirements. In order to put the trend in uniform perspective, adjustments must be made for changes in reporting requirements in this period. The trends of both unadjusted and adjusted values are shown in Figure 15. Chemicals and facilities required to report only during a portion of the period because of changes in reporting requirements have been excluded for the entire time for the

"Adjusted" trend.

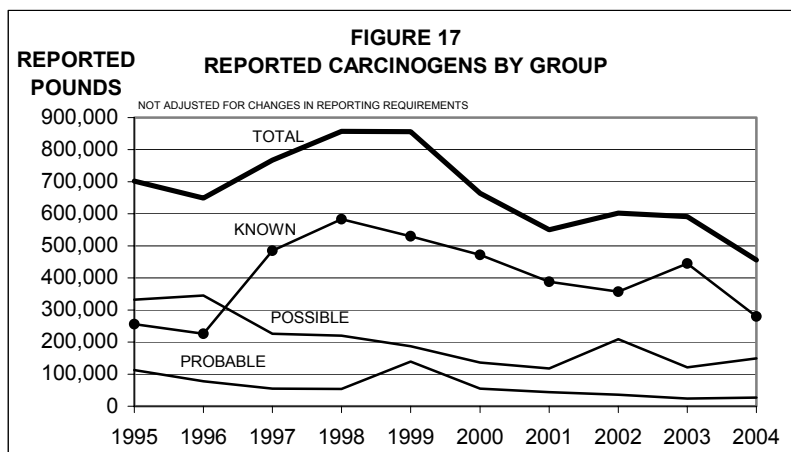
These adjustments generally involve exclusion of the power generating and ore processing industries, and involve metallic compounds produced from impurities in the fuel and raw materials used by these facilities. These facilities were required to start reporting in 1998. Adjustments occurring in this period affected the air, water, and land release amounts. For example, new reports for lead and lead compounds at their lower thresholds starting in 2001 accounted for 30,000 pounds of exclusions in 2004. Lead and lead compounds reports under the higher thresholds were not excluded if the facility was already reporting them in 2000 or before. In either the adjusted or unadjusted trend, the strong downward trend continued in 2004. Additional carcinogen detail is reported in Appendix J.

Figure 16 shows the effects of each of the media category releases on the total reported carcinogen release trend. Air and land releases equally influence the total, while water releases play a relatively minor part.



Known Carcinogens

Figure 17 shows the trend of each of the three carcinogen groups and their effect on the total on-site release. Reported land releases of all known carcinogen compounds (5) were 38% of carcinogen total on-site releases and 78% of all carcinogen on-site land releases. Premcor and the Indian River Power plant reported over 90% of the nickel compound releases to land. From 1997-2000, the land release reports of nickel compounds, a product of fuel combustion at Premcor, greatly influenced the values for known carcinogens. Their 1997 value was 283,000 pounds. Now, although their amount is lower at 56,000 pounds, it remains a significant contribution to the 107,000-pound land release total, and nickel compounds, 90% released to land, remain highest in the known carcinogen category. Chromium compounds, 95% released to land and also a product of fuel combustion, are second at 76,500 pounds, with Premcor and the Indian River Power Plant again contributing 94% of these land releases.



Reported air releases of known carcinogens have been declining and are now 43% of the peak in 1995. Vinyl chloride contributed 71% of the known carcinogen category air releases in 2004. Vinyl chloride constitutes over 31% of all carcinogen air releases and 15% of

carcinogen total on-site releases for air, water, and land in 2004. Vinyl chloride, with a total release of 69,000 pounds and only reported by Formosa Plastics, is third in the known carcinogen category. Formosa Plastics reported 63,000 pounds of vinyl chloride and Kaneka reported 21,000 pounds to air in 2003, but Kaneka is now closed. Benzene releases to air, all from Premcor and Sunoco, have declined from 58,000 pounds in 1995 (from Premcor and the now closed Metachem facility) to 6,200 pounds in 2004. Benzene made up 6% of the known carcinogen air releases.

Water releases on-site of known carcinogens are 2.7% of the known carcinogen total. Benzene and nickel compounds contributed 73% of the known carcinogen release to water.

Probable Carcinogens

All probable category carcinogens (7) were reported released to air during this period. The largest air release contributors were trichloroethylene, reported by Camdel Metals, and 1,3-butadiene, reported by Dow Reichhold. They combined for 88% of the probable carcinogen releases. The trend for trichloroethylene release has declined 29%, down from 29,332 pounds in 1995 to 20,723 pounds in 2004. The trend for 1,3-butadiene, down 60% in 2004, is now at 4,138 pounds and only 6% of the 72,439 pounds reported in 1995. The probable carcinogen air release high in 1999 (139,923 pounds) was due to an 83,000-pound reported release of formaldehyde from Premcor. The probable carcinogen total for 2004 is 27,421 pounds.

Possible Carcinogens

There are 18 chemicals in this category. About two-thirds of the total amount is reported released to air, one-third to land, and a small amount to water. The top release in this category is vinyl acetate, 98% (42,000 pounds) of which is released by Formosa Plastics. The Formosa report accounts for 29% of the total category release and 44% of the category release to air. This release was estimated using a higher basis starting in 2002. Although the Formosa reported amount (42,628 pounds for 2004) is much higher than the 12,000 pounds reported for 2001, the actual amount may not be much different from prior years because of the change in basis. Styrene, 69% of which is released by Justin Tanks, is the second highest on-site release for this class. Styrene accounts for 21% of the total release for this category. The Justin Tanks' trend has decreased 15% since 1995, and total styrene releases have decreased by 25% over the 1995-2004 period.

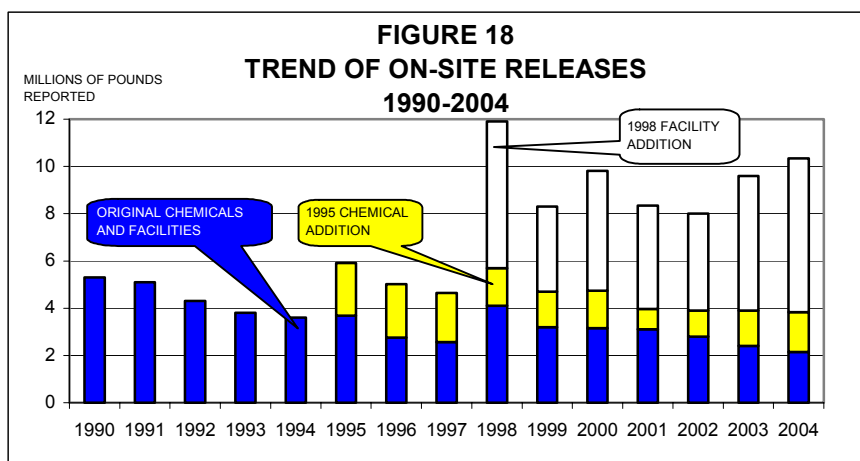
As before, in **Limitations of TRI Data** on Page 3, we urge caution when using this data, as THIS DATA DOES NOT INDICATE AMOUNT OF HUMAN EXPOSURE.

Trend Analysis

TRI data is available back to 1987. Changes in the reporting requirements over time have caused an increase both in the number of chemicals and in the types of facilities subject to reporting. As explained on page 8, two of the most significant changes to TRI reporting occurred in 1995 and 1998, when large increases in chemicals (1995) and facilities subject to reporting (1998) occurred. The trend of reported on-site releases is shown in Figure 18 below.

Effect of Chemical and Facility Group Additions, 1990-2004

As mentioned above, significant groups of chemicals and facilities were added to the TRI program at two times over the years. Other smaller groups, or even individual chemicals, were also added or deleted over this time. Analysis later in this section will start with the first addition in 1995 and remove the major group



of facilities that were added in 1998 to show the trend of constantly reportable groups of facilities and chemicals over time. Figure 18 shows the effect of starting in 1990 and follows the trend of each group since it was added to the TRI program. Data from 1987-89 is excluded because reporting requirements changed significantly and a valid comparison with later data is not feasible.

The trend of each group and the reports affecting the trends will be discussed in the following portions of this section. The original group and the 1995 group of added chemicals shows a generally decreasing trend over time, but the group of facilities added in 1998 now reports for the first time an increase over its initial amount, because of the increase reported in 2004. The table below shows the amount reported in millions of pounds for each group at the time it was added, the 2004 reported amount, and the amount of change since the time it was added. The unadjusted increase in Statewide total amounts reported is the result of the additions. If each group had remained constant at the time of its addition, amounts reported for 1998 and beyond would be 13.7 million pounds instead of the 10.6 million pounds actually reported in 2004. The reporting facilities have effected a reduction of 3.4 million pounds, or 26%, in their reported TRI chemical releases since 1990 or later, if they were not reporting in 1990.

GROUP	STARTING YEAR AMOUNT Millions Of Pounds	2004 AMOUNT	CHANGE
Original Facilities and Chemicals	5.30	2.15	-3.15
1995 Chemical Addition	2.23	1.68	-0.55
1998 Facility Addition	6.20	6.51	+0.31

Unadjusted Trends, 1995-2004

The analysis presented in this section uses 1995 as a base year for presenting trends for all reportable chemicals and facilities and is **not adjusted** for changes in reporting requirements. Table 12 and Figure 19 show the results of reporting during the entire 1995-2004 period. For comparison, look at the corresponding adjusted values in Table 13 on the facing page (39).

TABLE 12
1995-2004 TRI DATA SUMMARY
(REPORTED AMOUNTS IN POUNDS)

NOT ADJUSTED FOR CHANGES IN REPORTING REQUIREMENTS

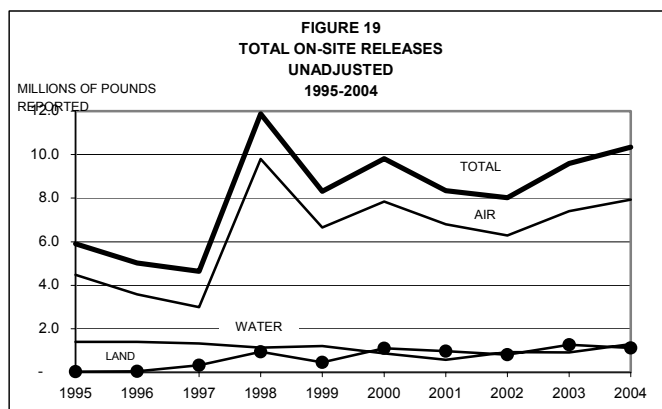
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Number of Facilities	75	77	74	80	76	80	82	83	84	72
Number of Form A's	33	40	34	75	72	61	57	55	55	52
Number of Form R's	228	220	242	277	254	310	316	316	323	302
Number of Chemicals	90	98	100	106	101	109	104	106	103	102
On-site Releases										
Air	4,483,402	3,586,182	2,995,461	9,796,431	6,651,166	7,841,017	6,796,684	6,281,850	7,408,646	7,935,591
Water	1,394,739	1,395,328	1,328,937	1,126,527	1,197,861	866,312	573,937	928,813	916,287	1,298,993
Land	28,678	42,409	317,243	937,708	462,579	1,103,632	965,666	814,385	1,263,958	1,111,392
Unadjusted On-Site Release	5,906,819	5,023,919	4,641,641	11,860,666	8,311,606	9,810,961	8,336,287	8,025,048	9,588,891	10,345,976
Off-site Transfers										
POTWs	3,214,800	4,522,131	4,301,095	3,286,302	2,996,401	2,199,807	1,575,732	1,201,161	1,432,790	1,433,310
Recycle	17,127,835	10,054,483	10,612,518	12,002,926	9,295,315	8,649,678	8,845,326	9,248,730	8,366,885	9,841,412
Energy Recovery	2,427,102	1,173,331	1,663,440	1,491,543	1,389,936	2,543,840	2,642,626	2,538,090	2,834,075	2,755,903
Treatment	910,090	1,297,004	688,661	630,761	894,822	901,604	183,567	398,572	370,126	179,969
Disposal	2,767,339	2,905,928	4,010,594	3,983,506	3,056,466	3,816,862	3,878,689	4,196,691	4,084,899	3,917,032
Total Transfers	26,447,166	19,952,877	21,276,308	21,395,038	17,632,940	18,111,791	17,125,940	17,583,245	17,088,774	18,127,625
On-site Waste Mgmt.										
Recycle	29,100,208	29,882,121	32,996,062	34,549,050	32,671,856	31,188,694	24,133,885	25,033,817	22,404,667	8,772,135
Energy Recovery	332,834	219,184	19,255,280	16,155,665	22,981,591	29,095,221	25,863,740	15,740,469	16,455,440	23,595,635
Treatment	55,990,904	51,590,060	69,425,233	68,475,327	69,501,151	64,404,879	40,716,252	33,376,885	30,286,021	31,619,848
Total On-Site Mgmt.	85,423,946	81,691,365	121,676,575	119,180,042	125,154,598	124,688,794	90,713,877	74,151,170	69,146,128	63,987,618
Total Waste	117,777,931	106,668,161	147,594,524	152,435,746	151,099,144	152,611,546	116,176,104	99,759,463	95,823,792	92,461,219

NOT ADJUSTED FOR CHANGES IN REPORTING REQUIREMENTS

SOURCE: DNREC 2004 DATABASE, NOVEMBER 2005

On-Site Releases Unadjusted 1995-2004

On-site releases include emissions to the air, discharges to bodies of water, and releases at the



facility to land including placement in on-site landfills. Figure 19 shows the trend of on-site releases without adjustments. The increase in 1998 was due to the change in reporting requirements as explained on page 8, when a large number of new facilities started to report. Unadjusted on-site release amounts increased 8% (757,000 pounds) since 2003, but have decreased 13% since the peak in 1998. Significant changes reported in 2004 include:

FACILITY	CHEMICAL	MEDIA	AMOUNT (pounds)
Indian River Power Plant	Hydrochloric Acid	Air	+600,000
Premcor	Ammonia	Air/Water	+196,000
Invista Seaford	Nitrate Compounds	Water	+192,000
Indian River Power Plant	Barium compounds	Land	+159,000
Premcor	Sulfuric Acid	Air	-90,000
Premcor	Vanadium Compounds	Land	-258,000

Adjusted Trends 1995-2004

When the new facilities that were added in 1998 are removed from the trends, the adjusted result is shown in Table 13 and Figure 20. Table 13 shows the adjusted amounts of TRI chemicals in all categories that were reported in 1995-2004. This table is adjusted to show only those facilities and chemicals that were reporting in 1995 and earlier. Facilities and chemicals added after 1995 are not included. For comparison, look at the corresponding unadjusted values in Table 12 on the facing page (38).

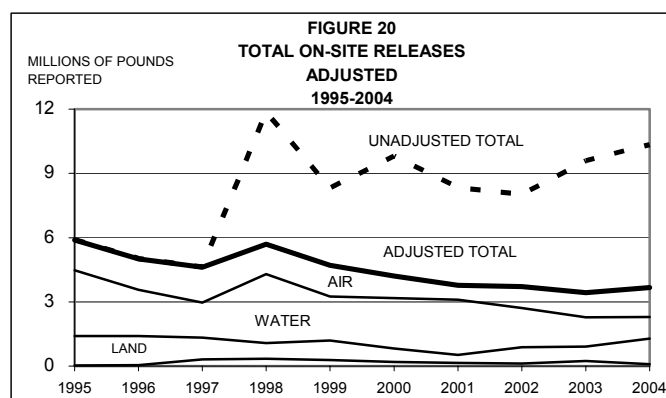
TABLE 13
1995-2004 TRI DATA SUMMARY
(REPORTED AMOUNTS IN POUNDS)

ADJUSTED FOR CHANGES IN REPORTING REQUIREMENTS AFTER 1995										
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Number of Facilities	73	75	73	69	66	67	68	69	69	58
Number of Form A's	28	34	29	30	32	31	31	34	35	30
Number of Form R's	221	212	237	240	231	241	235	229	239	212
Number of Chemicals	87	94	98	103	98	101	95	97	94	90
On-site Releases										
Air	4,466,247	3,569,898	2,973,704	4,286,680	3,246,228	3,179,809	3,095,921	2,709,026	2,276,521	2,303,184
Water	1,394,739	1,395,328	1,328,937	1,066,787	1,186,041	826,660	524,281	884,057	904,351	1,275,300
Land	28,678	42,409	317,243	347,129	278,319	194,448	144,956	117,249	243,873	93,534
Adjusted On-Site Releases	5,889,664	5,007,635	4,619,884	5,700,596	4,710,588	4,200,917	3,765,159	3,710,331	3,424,745	3,672,018
Off-site Transfers										
POTWs	3,214,795	4,511,126	4,301,090	3,286,189	2,996,375	2,199,732	1,575,639	1,200,858	1,432,235	1,427,553
Recycle	17,127,835	10,054,483	10,544,518	11,963,716	9,295,315	8,613,087	8,833,437	9,217,843	8,351,340	9,061,209
Energy Recovery	2,427,102	1,173,331	1,663,440	1,491,543	1,389,936	2,543,840	2,642,626	2,538,090	2,834,075	2,755,903
Treatment	897,090	1,277,004	675,561	611,696	894,822	899,534	172,939	398,571	370,126	179,718
Disposal	2,767,339	2,905,928	4,010,594	3,719,902	2,985,340	3,472,927	3,572,487	3,825,836	3,678,483	3,496,947
Total Transfers	26,434,161	19,921,872	21,195,203	21,073,046	17,561,788	17,729,120	16,797,128	17,181,199	16,666,258	16,921,330
On-site Waste Mgmt.										
Recycle	29,100,208	29,882,121	32,996,062	34,549,050	32,671,856	31,188,654	24,133,520	25,033,532	22,404,664	8,761,532
Energy Recovery	332,834	219,184	19,255,280	16,155,665	22,981,591	29,095,220	25,863,740	15,740,469	16,455,440	23,595,635
Treatment	55,811,179	51,424,487	68,575,887	67,199,660	69,149,944	63,832,520	40,103,027	32,404,441	29,086,296	29,479,803
Total On-Site Mgmt.	85,244,221	81,525,792	120,827,229	117,904,375	124,803,391	124,116,394	90,100,287	73,178,441	67,946,400	61,836,970
Total Waste	117,568,046	106,455,299	146,642,316	144,678,017	147,075,767	146,046,431	110,662,574	94,069,971	88,037,403	82,430,317

ADJUSTED FOR CHANGES IN REPORTING REQUIREMENTS
SOURCE: DNRDC 2004 DATABASE, NOVEMBER 2005

On-Site Adjusted Releases 1995-2004

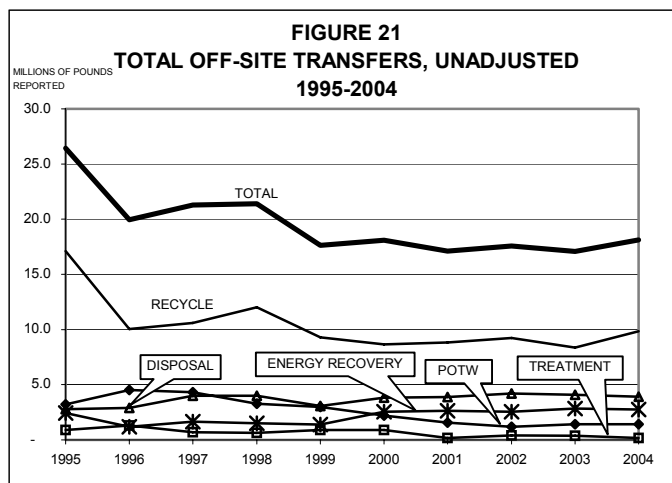
Overall, reported **adjusted** on-site releases increased 7% (247,000 pounds) in 2004 following a 7% decrease in 2003. Since 1995, adjusted on-site releases have decreased 36% (2.2 million pounds). Figure 20 shows this trend. Data on this page can be compared to page 38 to see the effects of the adjustments, and the top line in Figure 20 shows the effect of the new facilities when removed from the totals. Significant changes not included in the unadjusted trend in 2004 include:



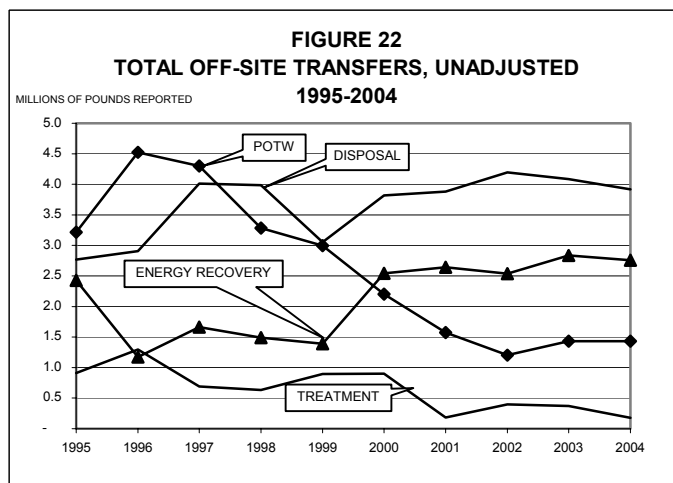
FACILITY	CHEMICAL	MEDIA	AMOUNT (pounds)
Dupont Edgemoor	Manganese Compounds	Water	+83,000
Perdue Georgetown	Nitrate Compounds	Water	+50,000
Sunoco	Ethylene	Air	+40,000
General Motors	Xylene (Mixed Isomers)	Air	-38,000
Premcor	Nickel Compounds	Land	-81,000
Premcor	Chromium Compounds	Land	-84,000

Some of these changes have been caused by improvements in the way facilities estimate amounts, and many of these changes were discussed in the Top 15 or Second 15 facility profiles. You may contact the facility for a more in-depth discussion of the reasons for specific changes.

Off-Site Transfers Unadjusted 1995-2004



An off-site transfer is a transfer of toxic chemical in wastes to another facility that is physically separate from the reporting facility. Figures 21 and 22 show the trends in amounts of TRI chemicals in wastes transferred off site for all facilities and chemicals reporting since 1995. To increase clarity, Figure 22 expands the lower portion of Figure 21. For comparison, look at the corresponding adjusted values on the facing page (41). Chemicals are reported as transferred to an off-site facility when they are transported away from the reporting facility for the purposes of treatment at a publicly owned treatment works (POTW), recycling, energy recovery, treatment, or disposal facility. As discussed on page 29, the receiving facility may be in Delaware or another State. Although the off-site transfers may be of less immediate local concern than on-site releases, transfer to POTWs, treatment, and disposal still represent toxic chemicals in wastes that must be ultimately accounted for. As noted on page 29 and in Table 12 on page 38, the amounts reported here as transferred off-site are much greater than the amount of on-site releases. Significant changes reported for off-site transfer trends in 2004 are:



FACILITY	CHEMICAL	OFF-SITE METHOD	AMOUNT (pounds)
Johnson Controls	Lead Compounds	Recycle	-373,000
Honeywell	n-Hexane	Treatment	-175,000
Rohm and Haas	N,N-Dimethylformamide	Energy Recovery, POTW	-171,000
DuPont Edgemoor	Manganese Compounds	Disposal	-127,000
Cytec	Methanol	POTW	+116,000
Agilent Technologies	Toluene	Energy Recovery	+119,000
Premcor	Nickel Compounds	Recycle	+130,000
Ciba	Methanol	Recycle	+220,000
SPI Polyols	Nickel Compounds	Recycle	+304,000
Citisteel	Zinc Compounds	Recycle	+517,000

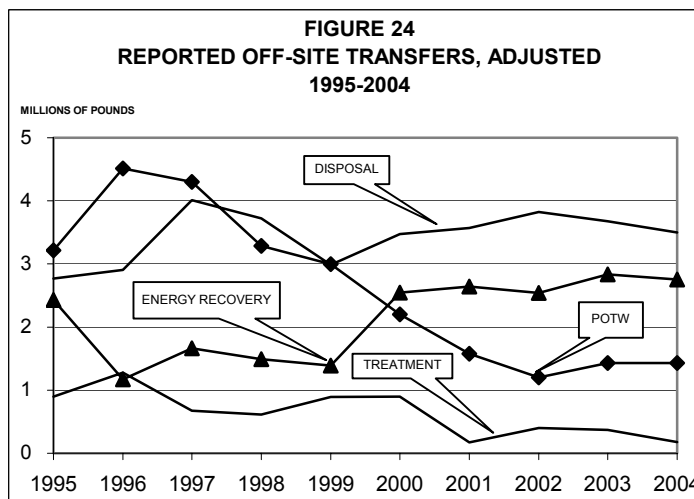
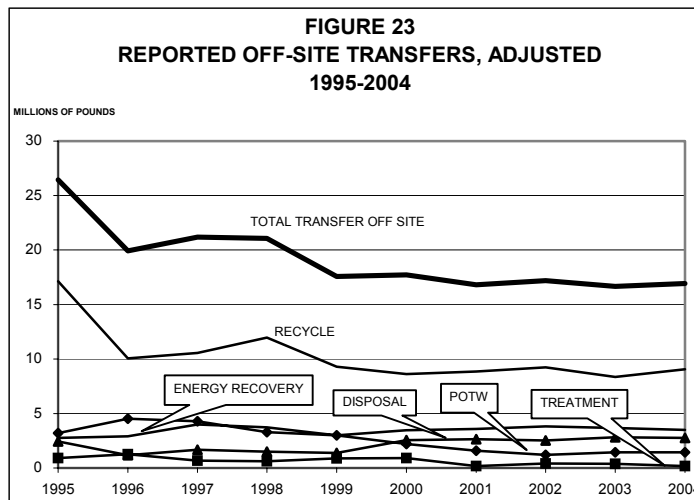
Off-Site Transfers Adjusted 1995-2004

Figures 23 and 24 show the trends in amounts of TRI chemicals reported in wastes transferred off-site for facilities and chemicals reporting since 1995. Figure 24 expands the lower portion (0.0 - 5.0 million pounds) of Figure 23. The amount of chemicals reported as transferred off-site since 1999 show a relatively flat trend through 2004. For comparison, look at the corresponding unadjusted values on the facing page (40). As shown in Table 13, over 50% of all off-site transfers are to recycling operations, so the total trend in Figure 23 is strongly influenced by the trend in amounts sent to off-site recycle.

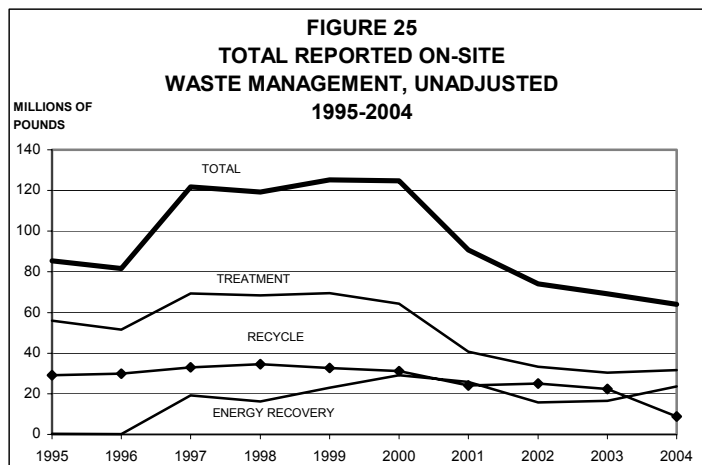
The total adjusted net change in off-site transfers reported in 2004 was an increase of 1.5% (255,000 pounds) since 2003, but the total adjusted trend is lower by 36% (-9,513,000 pounds) since 1995. Amounts sent to off-site recycle increased by 8.5% (710,000 pounds) in 2004, and this was partially balanced by a decrease of -51% (-190,000 pounds) in the amount sent to treatment and -4.9% (-182,000 pounds) sent off-site for disposal. Reported amounts sent off-site to POTWs and to energy recovery showed smaller reductions.

Unlike on-site releases where the amount of adjustment was 65% of the total because of the large reported releases to on-site air by the new facilities, off-site transfers are largely reported by original facilities, and the adjusted amount, 342,000 pounds, is only 7% of the total. Most of this amount, 336,000 pounds, was the reported transfer of ash off-site for disposal from the Edgemoor/Hay Road power plants.

The total changes were balanced by other smaller increases and decreases from other reports at other facilities.



On-site Waste Management, Unadjusted, 1995-2004



In some facilities, wastes were reported as managed on-site instead of being sent off-site for processing or disposal. On-site waste management is the processing of chemicals in wastes that do not leave the site of the reporting facility. When chemicals are recycled, recovered for energy, or treated at the facility, they are reported as managed on-site. Although these amounts represent a loss of finished product to the facility as waste, they are not as much of a threat to the environment as the other on-site categories since these amounts are

managed and not disposed of or released on-site. There is, of course, the risk that these chemicals may be released accidentally on-site to the environment during the waste management process. Figure 25 shows the trends for the on-site waste management activities since 1995. The increase in 1997 was due to two reports from Premcor: The first was an increase of 16,000,000 pounds for on-site treatment of methanol, and the second was an increase of 17,000,000 pounds for on-site energy recovery of ammonia. The decrease in 2001 was due to a decrease of 7,500,000 pounds in formaldehyde energy recovery, a decrease of 2,100,000 pounds in methanol treatment, and a decrease of 8,000,000 pounds in MTBE treatment at Premcor, and a decrease of 8,000,000 pounds in hydrochloric acid treatment at DuPont Edgemoor.

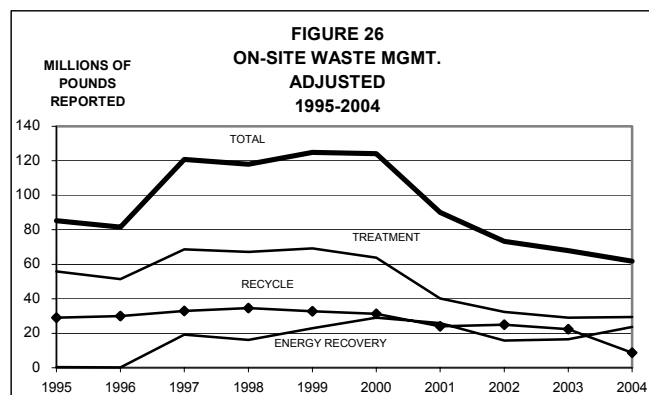
Significant changes reported for on-site waste management trends in 2004 are:

FACILITY	CHEMICAL	ON-SITE WASTE MANAGEMENT METHOD	AMOUNT (pounds)
Camdel Metals	Trichloroethylene	Recycle	-13,100,111
NVF Yorklyn (closed)	Zinc Compounds	Recycle	-1,950,000
MacDermid	Methyl Ethyl Ketone (delisted)	Treatment	-825,000
DuPont Edgemoor	Hydrochloric Acid	Treatment	-642,000
Premcor	Formic Acid	Treatment	-400,000
DuPont Edgemoor	Chlorine	Treatment	-310,000
Premcor	Hydrogen Cyanide	Energy Recovery, Treatment	+634,000
Premcor	Sodium Nitrite	Treatment	+749,000
Indian River Power Plant	Hydrochloric Acid	Treatment	+1,019,000
Rohm and Haas	N,N-Dimethylformamide	Recycle	+1,455,000
Premcor	Ammonia	Energy Recovery	+7,900,000

These changes were balanced by other smaller increases and decreases from other reports. Total unadjusted pounds for on-site waste management have decreased by 7.5% since 2003 and 25% since 1995. For comparison, look at the corresponding adjusted values on the facing page (43).

On-site Waste Management, Adjusted, 1995-2004

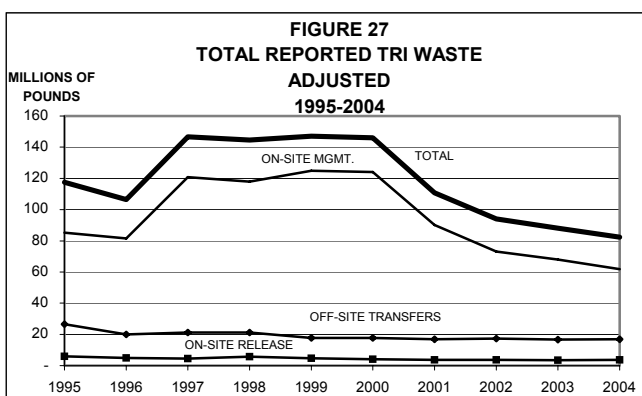
The reported trends for the three categories of on-site management and their total are shown in Figure 26 and the amounts in Table 13 on page 39. The total amount of waste managed on-site in 2004 was down 6.1 million pounds (9%) from 2003. Recycle amounts declined 61% (13,600,000 pounds), while energy recovery increased 43% (7,100,000 pounds), and treatment increased 1.4% (394,000 pounds). Since 1995, on-site waste management amounts have decreased 28% (23 million pounds). Although energy recovery amounts increased by 23 million pounds since 1995, recycle amounts decreased by 20 million pounds and treatment decreased by 26 million pounds.



As with off-site transfers, the adjustment for reporting requirements for on-site waste management activities is small, 2.2 million pounds out of the 64 million pounds reported, or about 3% of the total. Almost all of this adjustment is from the new electric generating facilities for on-site treatment of products of combustion or pollution control emissions. Because of this small adjustment, Figures 25 and 26 are almost identical. For comparison, look at the corresponding unadjusted values on the facing page (42).

Total Waste, Adjusted, 1995-2004

Figure 27 shows the adjusted totals and their grand total for the three waste categories taken from Figures 20, 23, and 26. This total reported waste amount continues its downward trend and is largely driven by on-site waste management. Pounds for total reported TRI waste have decreased by 6.4% (5.6 million pounds) since 2003 and 30% (35.1 million pounds) since 1995.



Unadjusted amounts, not shown in Figure 27, are higher, particularly for on-site releases (+6.6 million pounds) and for the total TRI waste amount (+10.1 million pounds). For comparison, look at the corresponding values in Tables 12 and 13, pages 38-39. Explanation for some of the changes in 1997 and 2001 are in the text at the top of page 42.

Adjusted Trend, 1998-2004

The second set of trends is for the 1998-2004 period. The new industry segments added in 1998 that were excluded in the 1995-2004 trends are included here. What is excluded in these adjusted trends is the PBT reports and other chemicals that were added or had reporting thresholds reduced in 2000-2001. However, the amount of these adjustments is small, with more than half of the reports being zero and all but one adjustment less than 5%. Because of the inclusion of the facilities added in 1998, the totals in Table 14 are higher than those in Table 13 on page 39. For comparison, look at the corresponding values for on-site releases on pages 38-39.

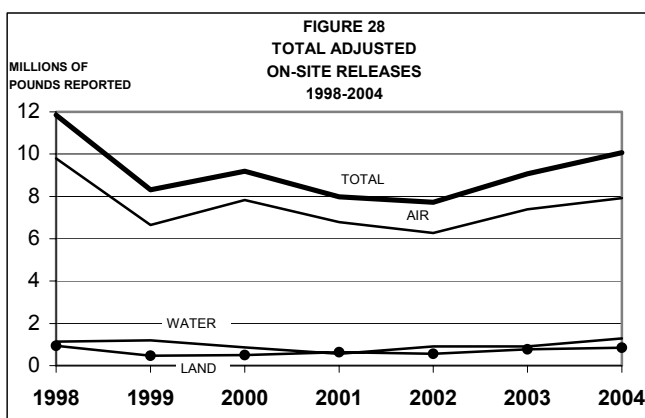
TABLE 14
1998-2004 TRI DATA SUMMARY
(REPORTED AMOUNTS IN POUNDS)

ADJUSTED FOR CHANGES IN REPORTING REQUIREMENTS AFTER 1998							
	1998	1999	2000	2001	2002	2003	2004
No. of facilities	79	76	80	80	75	77	67
No. of Form A's	70	72	61	57	55	55	52
No. of Form R's	271	254	278	283	255	265	248
No. of Chemicals	105	101	102	99	98	95	94
On-site Releases							
Air	9,787,574	6,651,166	7,827,472	6,779,996	6,271,189	7,396,828	7,926,376
Water	1,126,527	1,197,861	864,760	558,611	900,317	912,493	1,291,174
Land	937,708	462,579	500,395	636,925	556,219	765,842	853,571
Adjusted On-Site Releases	11,851,809	8,311,606	9,192,627	7,975,532	7,727,724	9,075,163	10,071,121
Off-site Transfers							
POTW's	3,286,297	2,996,401	2,199,804	1,575,700	1,201,157	1,432,780	1,433,303
Recycle	11,963,926	9,295,315	8,649,611	8,578,821	8,960,521	8,111,171	9,415,300
Energy Recovery	1,491,543	1,389,936	2,543,840	2,642,626	2,538,090	2,834,075	2,755,903
Treatment	611,996	894,822	900,353	172,939	398,571	370,126	179,968
Disposal	3,983,506	3,056,466	3,712,460	3,775,364	4,070,122	3,955,520	3,818,816
Total Off-site Transfers	21,337,268	17,632,940	18,006,068	16,745,450	17,168,462	16,703,672	17,603,289
On-site Waste Mgmt.							
Recycle	34,549,050	32,671,856	31,188,654	24,133,520	25,033,532	22,404,664	8,772,132
Energy Recovery	16,155,665	22,981,591	29,095,220	25,863,740	15,740,469	16,455,440	23,595,635
Treatment	68,126,327	69,501,151	64,403,879	40,716,062	33,376,635	30,285,631	31,619,428
Total On-Site Mgmt.	118,831,042	125,154,598	124,687,753	90,713,322	74,150,635	69,145,735	63,987,195
Total Waste	152,020,119	151,099,144	151,886,448	115,434,304	99,046,821	94,924,570	91,661,606

ADJUSTED FOR CHANGES IN REPORTING REQUIREMENTS
SOURCE: DNREC 2003 DATABASE, NOVEMBER 2004

On-Site Release, Adjusted, 1998-2004

Figure 28 shows the trend for reported on-site releases adjusted for new facilities and their chemicals added after 1998. The total is almost totally influenced by the reported releases to air. As in the unadjusted on-site trend (Figure 19), the adjusted trend here for 1998-2004 is also up, primarily because of the 45+% increase reported in electrical production during 2003 and 2004 at the Indian River Power Plant, and its corresponding hydrochloric acid amount increase.



Although there was an increase of 996,000 pounds (11%) in total reported on-site releases for this group in 2004, there has been a net decrease of 15% in reported on-site releases over the 1998-2004 time period.

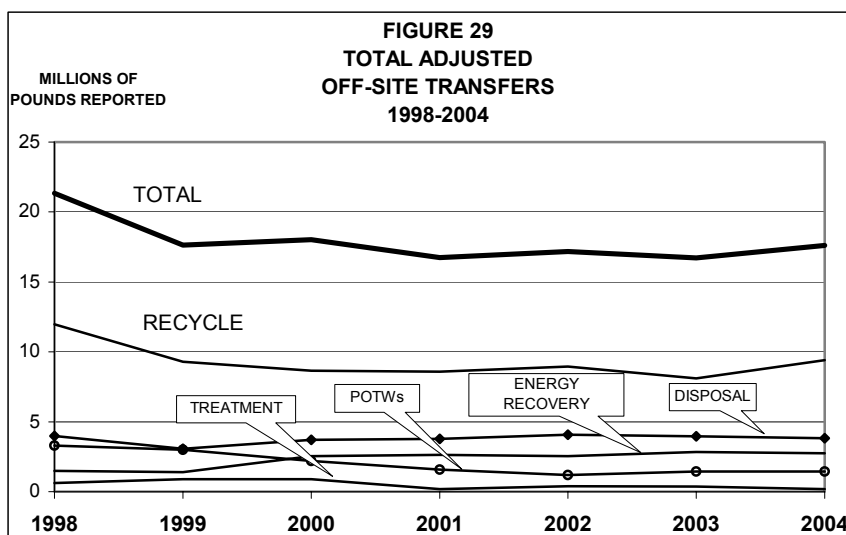
In addition to the notes in the facility profiles on pages 13-28 about how on-site waste releases may have changed this year, reports of significant changes for facilities and/or chemicals added in 1998 and reporting in 2004 are:

FACILITY	CHEMICAL	MEDIA	AMOUNT (POUNDS)
Indian River Power Plant	Hydrogen Fluoride	Air	+40,000
Sunoco	Ethylene	Air	+40,000
Invista	Sulfuric Acid	Air	+34,000
Edgemoor/Hay Road Power Plant	Sulfuric Acid	Air	-54,000
Edgemoor/Hay Road Power Plant	Hydrochloric Acid	Air	-67,000

Other facilities reported smaller amounts of increases and decreases to produce a net increase of 996,000 pounds for 2004.

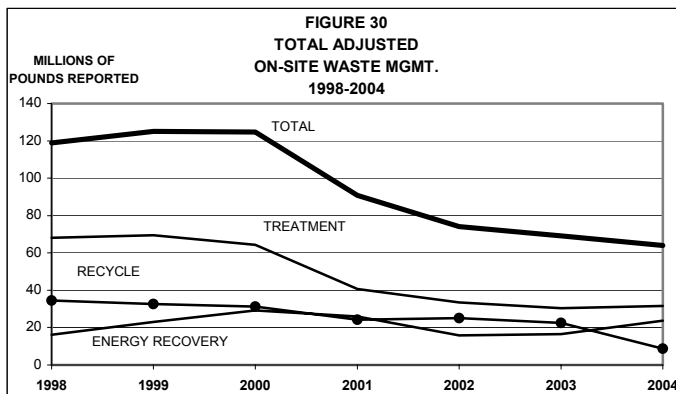
Off-Site Transfers, Adjusted, 1998-2004

The off-site transfer total reported amount was relatively unchanged in 2004. Table 14 and Figure 29 show the amounts transferred off-site, adjusted for the new reporting requirements starting in 1998. Off-site transfers increased 5% in 2004 but have decreased 18% since 1998. The increase in 2004 was because of a 16% increase in amounts reported as sent off-site to recycle, primarily the result of increased reports from the facilities noted in the table on page 40. There are no additional facility notes not already mentioned on pages 40-41 for off-site transfers in this time period.



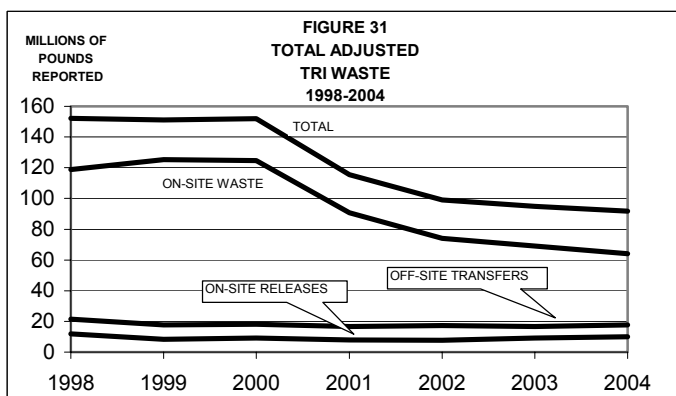
On-Site Waste Management, Adjusted, 1998-2004

The trend of on-site management of TRI chemicals in waste shows a continuing downward trend, -7.5% in 2004, due to a 13.6 million pound reported decline in on-site recycle as shown in Table 14 and Figure 30. Energy recovery increased 7.1 million pounds and treatment increased 1.3 million pounds in 2004. There are no significant changes for the new facilities added in 1998 in addition to the previous 1995-2004 facility notes for on-site waste management on pages 42-43.



Total Reported TRI Waste, Adjusted, 1998-2004

Figure 31 shows the sum of reported On-Site Releases, Off-Site Transfers, On-Site Waste Management adjusted for reporting in 1998-2004, and their grand total. The 2003-2004 trend is down by 3.3 million pounds, and the 1998-2004 trend is down by 60 million pounds (40%), mostly influenced by the trend of on-site waste management.



For comparison, look at the corresponding values in Tables 12 and 14, pages 38 and 44. An explanation for some of the changes that happened in 2001 is in the text at the top of page 42.

Receiving TRI Chemicals in Wastes

When a facility transfers TRI chemical waste off-site, these wastes go to a receiving facility. Table 15 provides the total amounts of TRI chemicals reported as sent to Delaware facilities from other facilities, both in-state and out-of-state. Some of the receiving facilities in Delaware report to the TRI program as well, but many do not, based on the reporting requirements shown on pages 2 and 3. Only five percent of the TRI chemical wastes transferred to Delaware facilities are transferred to a TRI facility. DNREC does not receive reports from any out-of-state facilities that transfer wastes into Delaware. This data was obtained from the U.S. EPA.

TABLE 15
SUMMARY OF REPORTED TRANSFERS IN 2004
TRI CHEMICALS TRANSFERRED TO DELAWARE FACILITIES
FROM OTHER FACILITIES
(IN POUNDS)

DELAWARE RECEIVING FACILITY	TOTAL TRANSFERS TO DELAWARE FROM DELAWARE FACILITIES	TOTAL TRANSFERS TO DELAWARE FROM OUT OF STATE FACILITIES	TOTAL TRANSFERS RECEIVED BY DELAWARE FACILITIES
ASHWORKS DELAWARE CONCRETE PUMP SALES	0	336	336
CANNON IRON & METAL, INC	13,316	0	13,316
CITISTEEL *	0	93,958	93,958
CLEAN EARTH OF NEW CASTLE	0	369	369
DELAWARE RECYCLABLE PRODUCTS	21	0	21
DELAWARE SOLID WASTE AUTHORITY CHERRY ISLAND	11	0	11
DELAWARE SOLID WASTE AUTHORITY GEORGETOWN	162	0	162
DELAWARE SOLID WASTE AUTHORITY LAMBSON LANE	9,620	0	9,620
DELAWARE SOLID WASTE AUTHORITY SANDTOWN	564	0	564
DUPONT EXPERIMENTAL STATION	0	646,630	646,630
FIRST STATE RECYCLING	0	1,834	1,834
GENERAL CHEMICAL CORPORATION *	3,699	0	3,699
HALKO MFG.CO. *	0	24,364	24,364
INDUSTRIAL RESOURCE NETWORK, INC.	2,179	1,515	3,694
INTERNATIONAL PETROLEUM CORP.	0	25,609	25,609
KENT COUNTY TREATMENT PLANT	109,812	0	109,812
MOT TREATMENT PLANT	4	0	4
NEW CASTLE DEPT. OF PUBLIC WKS	43,880	0	43,880
NEWARK RECYCLING	1,734	0	1,734
SEAFORD MUNICIPAL TREATMENT PLANT	2,867	0	2,867
TILCON DELAWARE INC.	69	0	69
UNIQEMA INC. *	10,587	0	10,587
US FILTER	0	530	530
VFL TECHNOLOGY CORPORATION	403	26,614	27,018
WILMINGTON TREATMENT PLANT	1,271,389	16,172	1,287,561
TOTAL TRI TRANSFERS REPORTED	1,470,318	837,931	2,308,249

Source: U.S. EPA 2004 Data Run, December, 2005

* TRI Reporting Facility

The top receiving facility is Wilmington POTW, receiving off-site TRI chemicals in wastewater. The DuPont Experimental Station received the second Largest amount, a variety of chemicals for incineration from other DuPont facilities, all from out-of-state. The Kent County Treatment Plant received the third largest amount, primarily from TRI-reporting industrial customers in their region. The fourth largest receiver of TRI chemicals in wastes Citisteel, receiving metals from an out-of-state facility. These four receiving facilities account for 92% of all TRI chemicals received from in-state and out-of-state TRI facilities.

Pollution Prevention/Reduction Programs in Delaware

The Delaware Pollution Prevention Program in the Department of Natural Resources and Environmental Control (DNREC) facilitates the implementation of pollution prevention by industry, government and society. The Pollution Prevention Program (P2 Program) serves a non-regulatory function to provide information, technical assistance, training, and leadership on issues related to reducing and eliminating the generation of wastes and pollutants. The early years of the P2 Program concentrated on industry and its wastes. In recent years the program has assisted all aspects of Delaware's society, including expanded efforts to schools, environmental organizations, commercial and service businesses, and to State government itself.

Data for TRI reportable chemicals and other chemicals is becoming increasingly more available to the public. This public awareness has focused attention on the existence and quantity of these chemicals and on their management and possible reduction. Although EPCRA does not require a facility to reduce releases of chemicals reportable under its programs, many companies and facilities have implemented programs to reduce or eliminate releases of these chemicals. These programs may take the form of efficiency improvements, reuse, recycling, energy recovery, or material substitutions. The benefits of these programs are reduced raw material and waste disposal costs and reduced risks associated with the toxic chemicals. Also, these reductions demonstrate corporate responsibility to the facility neighbors and improve the corporate image with the public.

There are numerous programs within DNREC that impact the management of TRI chemicals through the issuance of permits or through other regulatory and non-regulatory activities. Most releases reported under TRI are also regulated through air emission, water discharge, and/or land disposal permits. Potential sources of toxics undergo technical reviews through which potential threats to the environment and to human health are reviewed prior to issuance of a permit. For example, the Engineering and Compliance Branch in the Air Quality Management Section enforces a provision in the Clean Air Act Amendment of 1990 that targets the control of hazardous air pollutants (HAPs). Nearly all HAPs are also reportable TRI chemicals. In addition, the Engineering and Compliance staff monitors TRI data to assess whether a facility complies with its Air Permits for TRI chemicals. Another example is the work performed by the Accidental Release Prevention (ARP) program. The ARP staff uses the TRI data to detect possible deficiencies at a facility that might result in an increased probability of an accidental release.

The Solid and Hazardous Waste Management Branch uses the TRI report to measure reductions of releases for the Waste Minimization Priority Chemicals list. The list is a result of EPA's Waste Minimization Program and has measurable goals that Delaware is working to attain. The DNREC Pollution Prevention program offers consultations to any generator of hazardous waste that requests it. The consultation is non-regulatory and non-enforcement in nature and is aimed at helping the company to reduce any and all waste streams, including the priority chemicals.

During 2004, DNREC's Air Quality Management Section monitored ambient air quality at 10 locations around the State. For more information, please refer to the "For Further Information" section under the 2003 Delaware Air Quality Report on page 51 of this report.

The Department of Natural Resources and Environmental Control (DNREC) has begun the development of a new Regulation that will reduce air emission from Delaware's coal and residual oil fired power plants. The reason for the new regulation is to protect public health, safety, and welfare from pollutants which include nitrogen oxides (NOx), sulfur oxides (SOx), and mercury. To aid in the development of the regulatory requirements, a review committee has been established. The review committee is made up of DNREC personnel, persons with environmental interests, persons impacted by the emissions from power plants, and power plant owners and operators.

NATIONAL PERSPECTIVE

The national 2004 TRI report has not been released by the U.S. Environmental Protection Agency (EPA) as of the writing of this report. However, placing the 2004 Delaware reports alongside the 2003 EPA reports yields some rankings that provide a perspective for Delaware in the national TRI picture. Changes in the 2004 national values may change these rankings.

This data shows that Delaware ranks 42nd in the nation in total on-site releases for all TRI chemicals. For on-site releases, 47 facilities in the nation each released more individually than all the facilities in Delaware combined. Delaware provided 0.26% of the total on-site release amounts nationwide.

Some facilities in Delaware do rank near the top of the national rankings for specific releases. DuPont Edgemoor ranks #1^t in the nation for off-site transfer of dioxin and dioxin-like compounds, #18 for on-site dioxin release, and #34 for total off-site transfers of all TRI chemicals. Formosa Plastics ranks #4 in the nation for on-site release of vinyl chloride and #16 for on-site release of vinyl acetate. Premcor ranks #19 for on-site release of hydrogen cyanide and #23 for cyanide compounds. Although no Delaware facility is in the top 100 for on-site release of mercury compounds, Occidental Chemical ranks #28 in the nation for total on-site release of elemental mercury and #34 for mercury on-site air release. Occidental has closed their mercury-related chlor-alkali operation as of November, 2005, so their TRI mercury report amounts are expected to fall to zero in the 2006 reporting year. DaimlerChrysler ranks #23 for on-site release of n-methyl-2-pyrrolidone and #37 for on-site release of 1,2,4-trimethylbenzene. The Indian River power plant ranks #48 for on-site release of hydrochloric acid. Delaware is ranked #20 in state rankings for on-site release of hydrochloric acid. The Indian River power plant ranks #58 within the coal and oil-fired electric generating facilities group (SIC 4911, 4931, and 4939) for total on-site release of all TRI chemicals.

FOR FURTHER INFORMATION

Access to the TRI Files - DNREC is responsible for collecting, processing, and distributing information submitted by Delaware facilities under the TRI program. This 2004 TRI report may be viewed at: <http://www2.state.de.us/serc/reports.shtml> . Additional information not contained in this report is available to the public through the EPCRA Reporting Program located within DNREC. A second, less technical data summary is available at the same location. A searchable database is located at: <http://www2.state.de.us/serc/services/search/index.shtml> .

The reports submitted by facilities are available for review through the Freedom of Information Act (FOIA) process from DNREC's Air Quality Management Office located at 156 South State Street in Dover. Custom reports can also be generated from the database. For information on placing a request, call the TRI Coordinator at (302) 739-4791 during business hours. An on-line FOIA application is also available at: http://www.dnrec.state.de.us/air/aqm_page/foia.htm .

Chemical Data Fact Sheets - A two-page fact sheet is available for most TRI chemicals reported in Delaware and contains information on chemical characteristics, health hazards, and ecological effects. These fact sheets were prepared by the EPCRA Reporting Program from information obtained through EPA's more lengthy TRI chemical fact sheets. The two-page fact sheets are available upon request. Additional TRI chemical information is available at: www.epa.gov/triinter/chemical/index.htm .

EPA's TRI Home Page - The TRI home page provides information on the many facets of the TRI program at EPA, including an Executive Summary, Q&A's, a link now to the 2002 TRI data, and later this year to 2004 data, a current list of reportable chemicals, reporting forms, state and federal program contacts, and various guidance documents available for downloading. This website has many links to other EPA and non-EPA sites associated with TRI: www.epa.gov/tri/ .

Toxics Release Inventory Public Data Release - EPA's annual TRI report. It covers information nationwide and provides a good perspective on how Delaware compares to other states: www.epa.gov/tri/tridata/index.htm . The 2004 edition of this report will be available Spring 2006 and will be available for review at the DNREC office at 156 South State Street in Dover. It can also be obtained by calling the federal EPCRA Information Hotline at 1-800-424-9346.

Envirofacts Electronic Warehouse - Envirofacts is an EPA-developed website that provides public access to multiple environmental databases, including TRI. Links are available to data about hazardous waste, water permits, drinking water, Superfund sites, air, water, toxics, and more. On-line queries allow the user to retrieve data and create reports, as well as generate maps: www.epa.gov/enviro .

Right-to-know Network (RTK NET) - Searchable nationwide TRI data is available through RTK NET. RTK NET was established by two non-profit organizations to provide access to TRI and chemical data, link TRI with other environmental data, and exchange information among public interest groups: www.rtk.net .

Delaware Public Health Cancer Rates and Causes -This site provides data and answers to many cancer-related questions: <http://www.state.de.us/dhss/dph/dpc/cancer.html> .

The Office of Pollution Prevention & Toxics is a part of the EPA that:

- Promotes pollution prevention as the guiding principle for controlling industrial pollution;
- Promotes safer chemicals through a combination of regulatory and voluntary efforts;
- Promotes risk reduction so as to minimize exposure to existing substances such as lead, asbestos, dioxin, and polychlorinated biphenyls; and,
- Promotes public understanding of risks by providing understandable, accessible and complete information on chemical risks to the broadest audience possible.

It is also a link to *Risk-Screening Environmental Indicators*. This model was developed by EPA's Office of Pollution Prevention & Toxics as a risk-screening tool that provides a relative comparison of TRI releases. This application is available on CD-ROM or through the Internet. Both of these are available through: www.epa.gov/opptintr.

Delaware's Pollution Prevention Program can be accessed at:

<http://www.dnrec.state.de.us/dnrec2000/pollutionprevention.asp>.

Environmental Defense Fund Scorecard - The EDF Scorecard combines scientific, geographic, technical, and legal information from many databases (with emphasis on TRI) to enable users to produce detailed local reports on toxic chemical pollution. Chemical profiles and a map generator are also available through the Scorecard: www.scorecard.org.

2004 Delaware Air Quality Report - The annual air quality report is prepared by the Air Surveillance Branch in the Air Quality Management Section of DNREC. This report presents data gathered from a Statewide network of air monitoring stations, and includes analyses, trends, and other information regarding Delaware's ambient air quality. For a copy of the report, or for more information, please call (302) 323-4542. This report is available on-line at: www.dnrec.state.de.us/air/aqm_page/reports.htm. The EPA site for additional air quality information is: <http://www.epa.gov/oar/oaqps/publicat.html>.

Delaware's Department Of Natural Resources and Environmental Control has a variety of environmental information, publications, and reports available at:

www.dnrec.state.de.us/dnrec2000/Elibrary.asp.

In addition to TRI, there are other provisions of the Emergency Planning and Community Right to Know Act (EPCRA), which provide information to the public as well as to local emergency planning and response organizations. Delaware has its own EPCRA statute which established these provisions under State law. For additional information, visit the Delaware EPCRA website at: <http://www2.state.de.us/serc/epcra.shtml>

Questions or comments regarding the TRI program are welcome. Please direct questions, comments, or requests to:

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